Products finishing

A.E.S. CONVENTION
and
INDUSTRIAL FINISHING
EXPOSITION
ISSUE

CLEANING
PLATING
POLISHING
FINISHING

JUNE 1952

Saving Nickel

Lea Copper-Glo

Something New in Bright High Speed Copper Plating

The Ronal Bright Copper Process* using Lea Copper-Glo is the answer to the platers' prayers because it answers the problem of extreme nickel shortages.

Lea Copper-Glo makes it practicable to plate properly prefinished steel and die-castings *directly* with chromium without any intermediate buffing operation. It makes it possible for you to forget your nickel worries.

The user of Lea Copper-Glo enjoys numerous advantages as for example:

OPERATING

- **Brilliant ductile deposits**
- **High current density with 100% efficiency**
- **Exceptional throwing power**
- **No wetting agents required**
- **Direct, interrupted or periodic reverse current**

COST SAVINGS

- **Reduces tank plating time due to high speed operation. (Hull cell bright current density range 10-60 amp./ft.²)**
- **Reduces rejects whether followed by bright nickel or otherwise; since it contains no wetting agents**
- **Reduces brightener costs to a few cents/100 gallons of plating solution per day**

The Ronal Bright Copper Process using Lea Copper-Glo can be fitted into your plant operating cycle. Regular cyanide or Rochelle Copper baths can be readily converted to obtain these advantages. Write for further information.

* The Ronal Bright Copper Process, using Lea Copper-Glo®, Is a development of Ronal Chemicals, Brooklyn, N. Y.

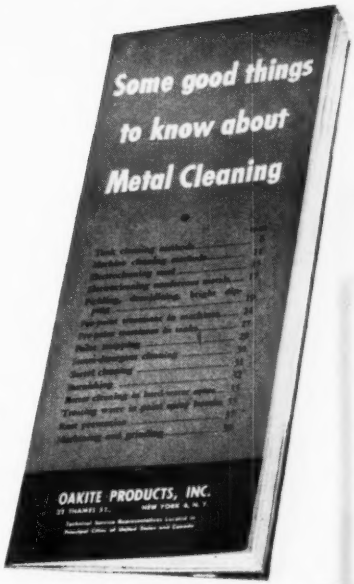
Burring, Buffing and Polishing . . . Manufacturers and Specialists in the Development of Production Methods, Equipment and Compositions

®

THE LEA MANUFACTURING CO.
16 Cherry Avenue, Waterbury 20, Conn.

LEA MFG. COMPANY OF CANADA, LTD.
370 Victoria Street, Toronto 2, Canada

Which of your metal-cleaning jobs would you like to improve?



Listed below are some of the operations discussed in Oakite's new 44-page illustrated booklet on Metal Cleaning. Please check the list. Then let us show you how Oakite materials and methods can give you better production with greater economy.

OAKITE PRODUCTS, INC., 20 Thames St., New York 6, N. Y.

Tell me (without obligation on my part) about Oakite methods and materials for the following jobs:

- ☐ Tank cleaning
- ☐ Machine cleaning
- ☐ Electrocleaning
- ☐ Pickling
- ☐ Pre-paint treatment
- ☐ Paint stripping
- ☐ Steam-detergent cleaning
- ☐ Barrel cleaning
- ☐ Burnishing
- ☐ Rust prevention
- ☐ Send me a FREE copy of your booklet "Some good things to know about Metal Cleaning"

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SPECIALIZED INDUSTRIAL CLEANING
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55 PAGES OF FACTS ON HOW TO CUT YOUR SMALL PARTS FINISHING COSTS

Now you can get up-to-the-minute news on the very latest developments in barrel-finishing — the fast, modern, economical process that deburrs, removes scale, tool marks and flash, and produces surface finishes and radii to blueprint specifications.

Norton Company's brand new booklet covers the subject thoroughly in 55 liberally illustrated, fact-filled pages — describes in detail every phase of barrel-finishing — tells you what to do, *and what not to do*, for best results.

PARTIAL LIST OF SUBJECTS

TYPES OF EQUIPMENT . . . CLEANERS . . . ROUGHING . . . RUST PREVENTIVES . . . FINISHING . . . PROCESSING OF SAMPLES . . . SEPARATION OF WORK FROM ABRASIVE . . . WASHING . . . DRYING . . . RESCREENING OF ABRASIVE . . . MIXING DIFFERENT PARTS.

GET THIS MONEY-SAVING INFORMATION

The new booklet also tells you how Norton ALUNDUM* tumbling abrasive — especially developed to meet industry's wartime needs for fast, efficient small parts finishing — has become a standard barrel-finishing medium in plants throughout the country.

Learn how this tough, hard abrasive helps you to shorten tumbling cycles, reduce scrap and reworking, and gives you consistently better finishing of parts ranging in size from tiny rivets to larger castings. Ask your Norton distributor or representative for your free copy of "Barrel-Finishing With ALUNDUM Tumbling Abrasive," or write us direct.

NORTON COMPANY, WORCESTER 6, MASS.

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(On leave of absence
U. S. Air Force)

Products Finishing

JUNE 1952
VOLUME 16 • NUMBER 9

CONTENTS

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The A.E.S.—Aims, Growth, and Service 25
Editorial

A.E.S. 39th Annual Convention 26
—Official Program 32
—Ladies Program 40
—Educational Program 48
—Where to Dine 62
—Shops 70

A.E.S. Industrial Finishing Exposition 72
—List of Exhibitors 76

Bicycle Finishing in Japan 88
By Ezra A. Blount

Giant Construction Equipment Gnome Size ..104
By Frank L. Bonem

Spotlighting Finishing Progress
By Dr. Allen G. Gray
—Current Distribution in Chromium Plating 114
—Methods for Measurement of Organic Finish Thickness Compared 118

On Display at Industrial Finishing Exposition ..128

News of the Industry 150
New Equipment, Materials, Processes 154
Product Literature 156
The Finishing Touch 158
Opportunity Section 159
Index to Advertisements 160

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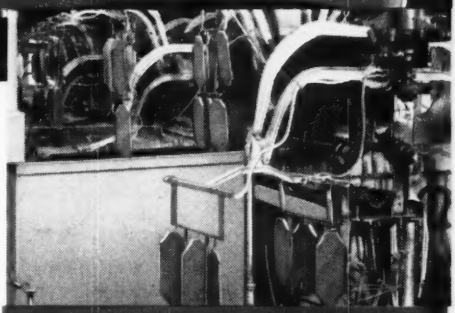
Stevens AUTOMATIC MACHINES SOLVE PLATING PROBLEMS FOR THE MAYTAG COMPANY

The use of Stevens Automatic Barrel and Automatic Plating equipment for plating washing machine parts at The Maytag Company plant in Newton, Iowa, has improved plating quality about 70%, according to T. H. Upton, superintendent of metal treating.

"Our Stevens machines require little maintenance and give a substantial saving in man hours at Maytag Plant No. 1, where all parts are plated. Stevens Plating Machines are tops in operation and the results we get from them are very successful. Our plating is more uniform and the controls are accurate. They have to be when we hold our plating tolerance to .0002," reports Mr. Upton.

Maytag's experience with Stevens equipment is typical of many other manufacturers who must combine "eye-appeal" with durable, lifelong performance. Stevens plating equipment is designed—from the ground up—to give better metal finishing results at lower per-unit cost. Call your Stevens representative or write direct to Frederic B. Stevens, Inc., Detroit 16, Michigan, for full details.



About 8000 larger parts are zinc-plated daily on this Stevens Automatic Plating Machine with 15 different parts being processed. Just one man operates this zinc-plating machine.

More than 400,000 parts are run through this Stevens Automatic Barrel Plating Machine daily with 328 different parts being plated. This machine also requires but one operator.

METAL FINISHING EQUIPMENT AND SUPPLIES SINCE 1883

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AMERICAN CHEMICAL PAINT COMPANY

AMBLER CHEMICALS ACP PROCESSES PENNA.

Technical Service Data Sheet

Subject: PROTECTING FRICTION SURFACES WITH THERMOIL GRANODINE®

INTRODUCTION

Fabricators and product designers, particularly in the automotive field, are aware that even highly polished surfaces under friction weld, gall and score. One of the most inexpensive and practical methods of preventing this is to coat the metal to prevent metal-to-metal contact. With cast iron or steel, the "Thermoil-Granodine" manganese-iron phosphate coating provides a wear-resistant layer of unusual effectiveness.

Thermoil-Granodizing protects the surface of products like the diesel engine liners shown above and the many moving parts of automobiles and other machines. "Thermoil-Granodine" is particularly valuable in these and similar applications because of its ability to retain oil and maintain lubrication under high pressures and high velocities.

"THERMOIL-GRANODINE" PROTECTS RUBBING PARTS

Thermoil-Granodizing removes "fuzz" from ferrous metal friction surfaces and produces a coating of non-metallic, water-insoluble manganese-iron phosphate crystals which soak up and hold oil as bare untreated metal cannot do. The oiled crystalline "Thermoil-Granodine" coating on piston rings, pistons, cylinders, cylinder liners, cranks, cam-shafts, gears, tappets, valves, spiders and other rubbing parts, allows safe break-in operation, eliminates metal-to-metal contact, maintains lubrication and reduces the danger of scuffing, scoring, welding, galling and tearing of the metal. The work to be protectively treated is merely Thermoil-Granodized and oiled, usually with a soluble oil.

CHEMICALS ACP PROCESSES

WRITE FOR FURTHER INFORMATION ON "THERMOIL-GRANODINE" AND ON YOUR OWN METAL PROTECTION PROBLEMS.

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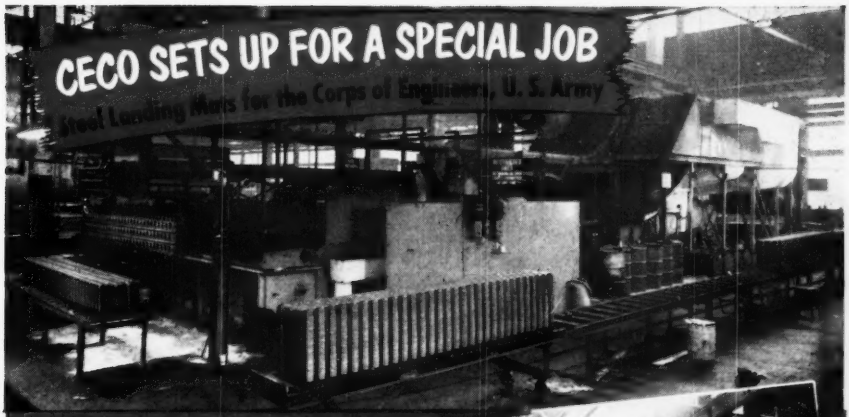


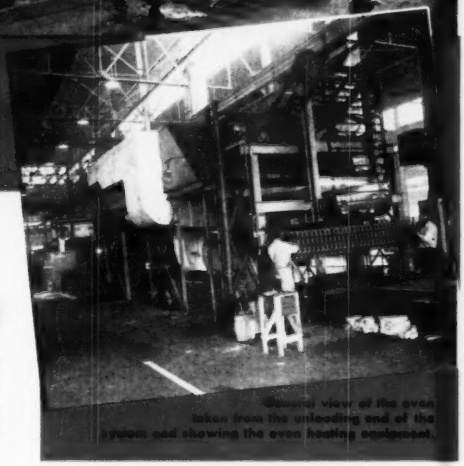
CLEANED, DIPPED
FINISH BAKED
by this

DESPATCH

Continuous Conveyor
FINISHING SYSTEM

To meet a stepped-up production schedule for Uncle Sam, the Ceco Steel Products Corporation of Chicago, installed this DESPATCH Finishing System used for cleaning, painting and finish baking of airplane landing mats.

The system comprises a gas heated, 2-stage, dip cleaning unit with alkali wash and hot water rinse, a paint dip tank and single pass finish bake oven of bottom entry, "A" type design. The oven is gas-fired and operates at a maximum temperature of 350°F. Material is suspended from cross rods on a continuous conveyor, which returns to the loading zone over the top of the oven.



General view of the oven, taken from the unloading end of the system and showing the oven heating equipment.

Fifty Years' Experience
DESPATCH CAN HELP YOU
BOOST PRODUCTION

Through 50 years of continuous research and on-the-job experience Despatch engineers have been accumulating facts and figures on how to give you better, higher producing finishing systems. Today, you benefit by these years of experience when you call on Despatch to help you. Despatch engineers will gladly analyze your requirements . . . will plan, select, coordinate and install complete Finishing Systems or individual units.

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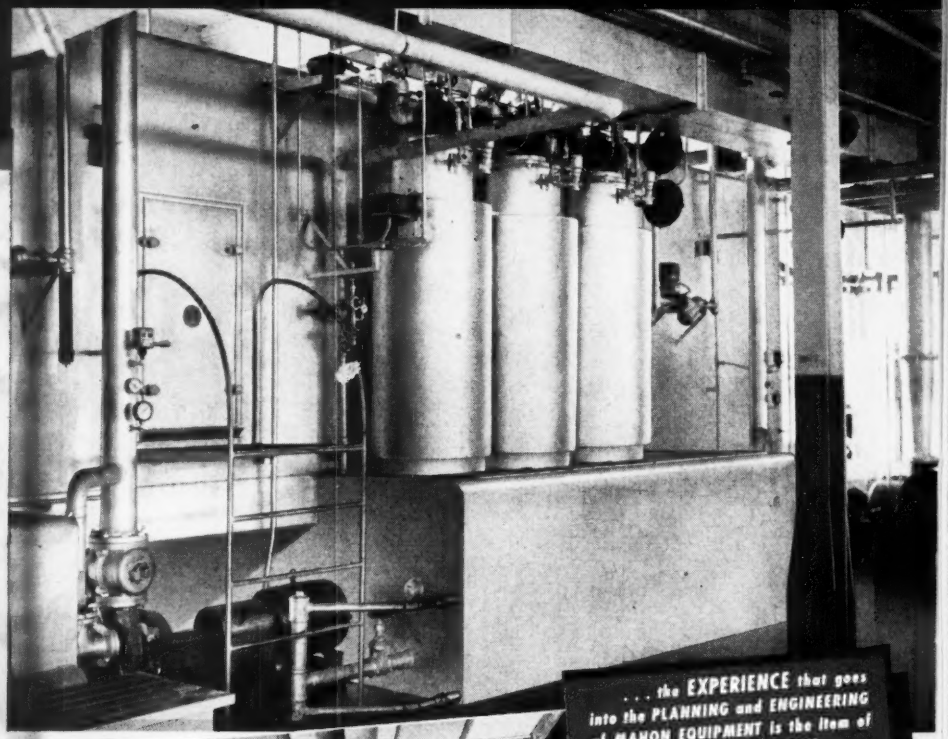

. . . the **EXPERIENCE** that goes into the **PLANNING** and **ENGINEERING** of **MAHON EQUIPMENT** is the item of **GREATEST VALUE** to **YOU!**

Interior view of one of the Mahon Hydro-Filter Spray Booths at Mullins Mfg. Corp. Note the "Hydraire" Fluid Sheet which improves working conditions.

Above you see Mahon Fire-Jet Heating Units (Patent Applied For) installed on a solution tank of the Cleaning and Rust Proofing Machine at Mullins Mfg. Corp. These modern heating Units eliminate all heat exchangers such as immersion fire tubes, steam coils, etc., and thereby simplify maintenance. Solution tanks are free from pipes, tubes and other obstructions and are easily cleaned. Mahon Fire-Jet Heating Units have eliminated the difficulties experienced with other solution heating devices.

M

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Finishing SYSTEMS

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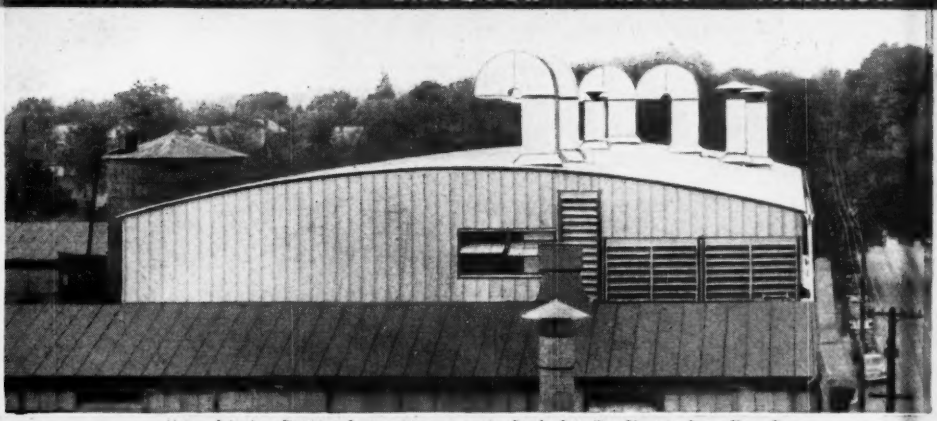

Units of Mahon Finishing System Housed on the Roof of Mullins Plant to Save Floor Space.

Every Unit of YOUNGSTOWN KITCHENS Gets its LUSTROUS FINISH in MAHON EQUIPMENT!

Wherever finish is a prime sales factor, there you will find Mahon Finishing Equipment. That is why the Mullins Manufacturing Corporation, producers of Youngstown Kitchens and the Jet-Tower Dishwasher, rely on Mahon engineers to provide the modern finishing equipment to insure their products the finest finish obtainable. This is not an isolated case . . . a survey will reveal that more home appliances and more automobiles—products where fine finish is imperative—are finished in Mahon Finishing Systems than all other types combined. In order to save floor space in the Mullins installation, the Finish Baking Oven, Oven Heating Units, Exhaust Fans, and Filtered Air Supply Systems for two Hydro-Filter Spray Booths (60 feet and 40 feet in length) were housed on the roof in an inclosure which is an integral part of the system. Metal Cleaning and Rust Proofing Equipment, Dry-Off Oven and Spray Booths are located on the third floor immediately below. If you are contemplating new finishing equipment, you will find Mahon better qualified to advise you . . . experience in planning, engineering, building and installing thousands of finishing systems of every type and size, for virtually every industry, has endowed Mahon engineers with a wealth of technical knowledge and practical know-how not available to you elsewhere. See Sweet's Mechanical Industries File for information, or write for Catalog No. A-652.

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HOME OFFICE and PLANT, Detroit 34, Mich. • WESTERN SALES DIVISION, Chicago 4, Ill.

Engineers and Manufacturers of Complete Finishing Systems—including Metal Cleaning and Pickling Equipment, Metal Cleaning and Rust Proofing Equipment, Dry-Off Ovens, Hydro-Filter Spray Booths, Filtered Air Supply Systems, and Drying and Baking Ovens; Core Ovens, Hydro-Foam Dust Collectors, Dust Traps, Fog-Filters, and other Units of Special Equipment.

AHON

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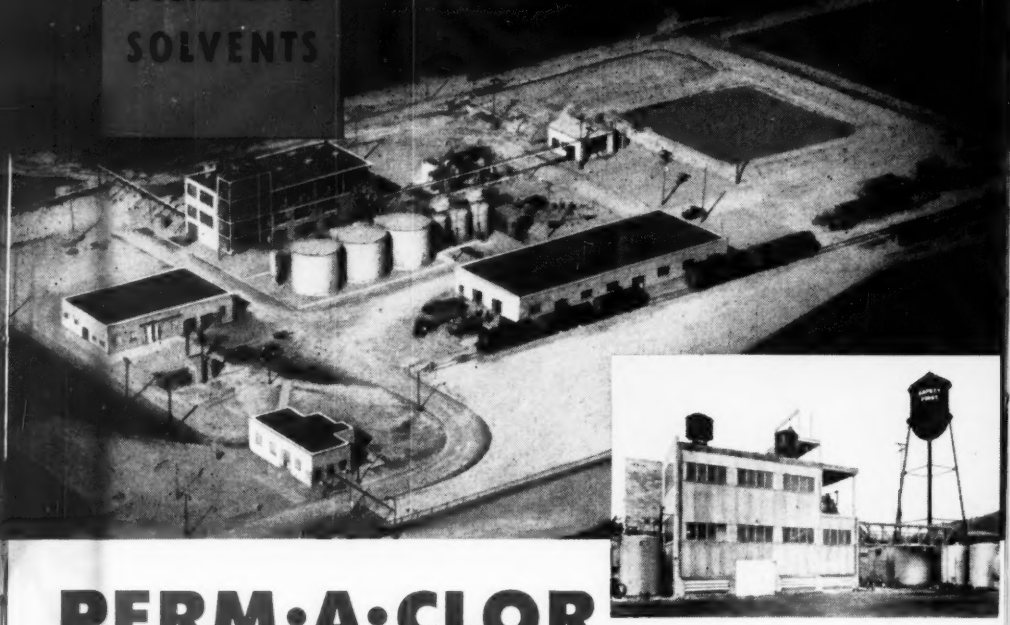

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This is important news . . . you can now have the benefits of Perm-A-Clor *at no higher price than ordinary solvents.* Perm-A-Clor, the original, highly stabilized trichlorethylene solvent, has earned a quality reputation doing industry's toughest degreasing jobs for twenty years . . . and now it's better than ever.

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The new low price and availability of Perm-A-Clor are due to expanded production facilities at the Detrex chemical plants . . . part of a continuing expansion program designed to permit Detrex to serve you better. Call your Detrex man today! **Detrex Corporation, Box 501, Detroit 32, Michigan.**

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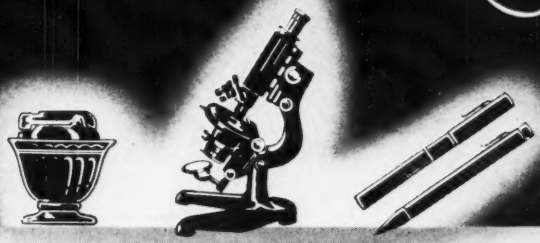
ALKALIES AND EMULSIONS • WASHERS • DEGREASERS
PHOSPHATE COATING PROCESSES • DEGREASING SOLVENTS
DRYCLEANING EQUIPMENT

Rhodium Plating



Rhodium is one of the six platinum group metals. It is hard and has an untarnishable brilliant white color. In electroplating, it produces beautiful results and is widely used for this purpose in jewelry — even precious metal jewelry. Its high reflectivity makes it excellent for mirrors for motion picture projectors and similar purposes. With restrictions upon usual plating metals, rhodium is the logical alternative for plating optical mounts, contacts for communication equipment, radar components, pen and pencil sets and a host of like objects.

Commercial rhodium plating was developed in our laboratories.

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NEW YORK • SAN FRANCISCO • CHICAGO

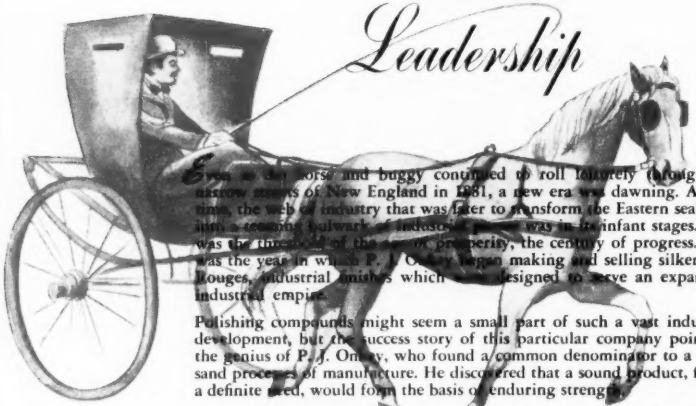
Let us send you "Directions for Rhodium Plating."

Seventy Years

IS A LONG TIME TO MAINTAIN

A POSITION OF

Leadership



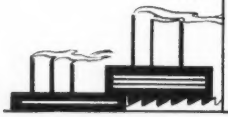
Even as the horse and buggy continued to roll leisurely through the narrow streets of New England in 1881, a new era was dawning. At this time, the web of industry that was later to transform the Eastern seaboard into a teeming bulwark of industrial power was in its infant stages. This was the threshold of the age of prosperity, the century of progress. This was the year in which P. J. Onkey began making and selling silken Red Rouges, industrial finishes which were designed to serve an expanding industrial empire.

Polishing compounds might seem a small part of such a vast industrial development, but the success story of this particular company points to the genius of P. J. Onkey, who found a common denominator to a thousand processes of manufacture. He discovered that a sound product, filling a definite need, would form the basis of enduring strength.

As industry grew and manufacturing facilities developed, Onkey formulated new finishing products to meet new requirements. Joseph J. Onkey joined his father in 1901. Together, they explored new materials, developed new methods and processes. Time and costs were cut and efficiency increased as their expanding business kept pace with the ever-growing strength of industrial America.

In 1932 Theodore F. Onkey joined the firm and later became its general manager. During this period, the Onkey family enlarged their manufacturing plant and explored new markets as nation-wide sales brought volume production to the highest point in the history of the company. This progress continued and in 1939, the business was incorporated as the Roberts Rouge Company, with Theodore Onkey as president. His son, Robert Lee Onkey, became president in 1951.

The Onkey family, pioneers of America's industrial age, developed and guided their business to a position of prominence through seventy years of industrial expansion. The Roberts Rouge Company is known throughout the country today for its fine industrial finishes.



Since 1881, literally billions of products have been finished by materials created by the Onkey family. Today these materials include every practical type of abrasive for every type of finish on metal, plastic or wood. As new problems arise, the Roberts Laboratories are ready to meet them with the accumulated experience of more than seventy years in the field of industrial finishing.

ROBERTS

DISTINCTIVE FINISHING COMPOUNDS

Since 1881

THE ROBERTS ROUGE CO. STRATFORD, CONNECTICUT

PLATECOILS

(REPLACE PIPE COILS)

save 5 ways

used as original equipment

in DAUER Bonderite Washers

1. Lower first cost
2. Simplified and less costly installation
3. Take less space in tank
4. Higher heat transfer rate
5. No pipe joints in solution

Send for complete technical manual and descriptive Bulletin No. P50.

PLATECOIL

Division

KOLD-HOLD MFG. CO.

LANSING 4, MICHIGAN

Why Platecoils Cost Less

LOW FIRST COST

The initial cost of Platecoil is often 50% or more below the cost of equivalent pipe coil depending, of course, on the materials used in construction

EASY INSTALLATION

By the use of "quick change hangers" Platecoil installations can be made in open tanks in one-half hour or less by one man and a helper.

NO THREADED JOINTS IN TANK

The entire Platecoil is electric welded and pressure tested. There are no joints to corrode or leak. Both connections to the Platecoil can be located above the liquid level where there is no danger of thread corroding and freezing.

GREATER TANK CAPACITY

A 22" x 47" Platecoil gives the same heat transfer surface as 32 feet of 1½" pipe. This pipe requires a space approximately 30" x 60". Platecoil thus saves about 50% over equivalent pipe coil.

WEIGHS 50% LESS

Weighing only about half as much as equivalent pipe coil, Platecoil is easy to handle. A whole maintenance crew is not needed to transport and install Pipecoil.

TANK MAINTENANCE WITHOUT LOSS OF SOLUTION

There is no need for workmen to get inside the tank in order to make replacements or repairs. A Platecoil can be removed in a matter of minutes with the solution still in the tank.

LITERATURE

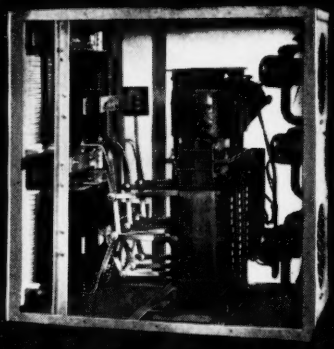
The new Platecoil Bulletin furnishes a complete description of the Platecoil method of tank heating. Write for your copy today.

HIGH BTU TRANSFER

More prime surface of Platecoil can be installed in a given area than can be obtained with pipe coil. Thus a more compact Platecoil unit provides much greater BTU transfer per unit area than can be obtained with pipe coil. Quick starts in heating tank solutions mean more hours of productive time.

Kold-Hold Manufacturing Company, Lansing 4, Michigan

ELECTRO-PLATING REQUIREMENTS *from* WAGNER ANODES

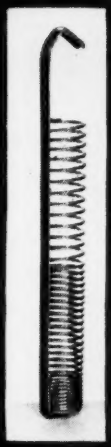


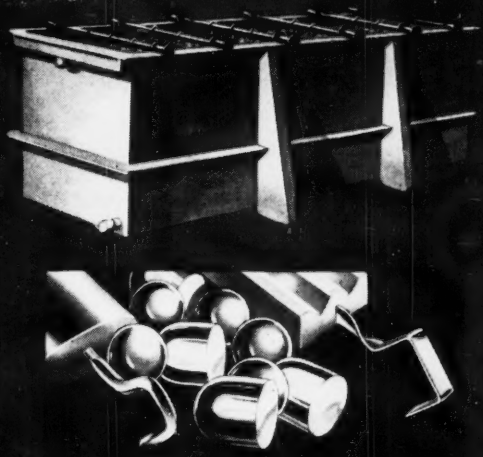
WAGNER-TIEDEMAN RECTIFIER with back panels removed showing easy access and simplicity. Note three low velocity cooling fans.

Anode production facilities here at Wagner Brothers are designed to maintain our reputation for providing none but *premium* products, the highest degree of purity in the plating industry. All types are available, promptly, in the following metals:

● Nickel, Iso-Cast Oval form, cast to give optimum grain size, any length. ● Copper, the famous Flat-Top, smooth surfaced, free from silicon, dirt and oxides; Lectrocop, pure electrolytically deposited slab form, any width or length, the lowest cost form of anode; Iso-Cast Oval, electrolytic copper molded under controls eliminating ferrous contamination. ● Zinc, in the *new standard* form, Flat-Top, easily identified, clean, cast from the purest metal. ● Tin, cadmium, available

Wagner





ANODE CONTAINER with spline welded full length, has 4-point contact. Plate at bottom catches "nubs", permits free circulation of solution. Close spacing of coils avoids jamming of anodes. Special lengths and curved containers fabricated promptly. Standard sizes in stock.

DOUBLE WELDED TANKS, all sizes, all types of linings, to your design or ours. Agitators, single or double cathode bars, as required.

WAGNER ANODES in all metals are recognized as standards of the industry. Every Wagner Anode is a premium product.

to ZINC SOLUTIONS

in any length in the distinctive corrugated Iso-Cast form with locked in steel contact hook. Balls are also available. ● White brass, 80% zinc, 20% copper, available in several shapes, as required.

Wagner-Tiedeman Electroplating Rectifiers have earned a place along with other Wagner premium products. Our ratings are conservative for full efficiency and safe performance. Removable panels permit quick and easy access. Ranges are from 2 to 50 volt, 750 to 10,000 or more amperes.

Wagner tanks are being incorporated in outstanding automatic and still tank operations everywhere. We're shipping to users far from our plant and the reason is simple: our tanks are built to last, our price is fair and we are ready to handle any quantity, one or one hundred, equipped with agitators and rods as required—or we'll provide your complete plating set-up, automatic or still tank.

Along with these products and the solutions, supplies and equipment for a complete electroplating system, we offer a competent sales-and-service staff. The Wagner representatives and branch managers are men with production experience and years of electroplating engineering behind them. They are backed up by an efficient laboratory and pilot plant, manned by some of the best technicians in the industry. Most important of all, you'll find every Wagner man enthusiastic about providing service to his clients and anxious to prove his ability and the integrity of the company he represents. Want proof? Pick up the phone and tell us your troubles or drop us a line at your first opportunity.

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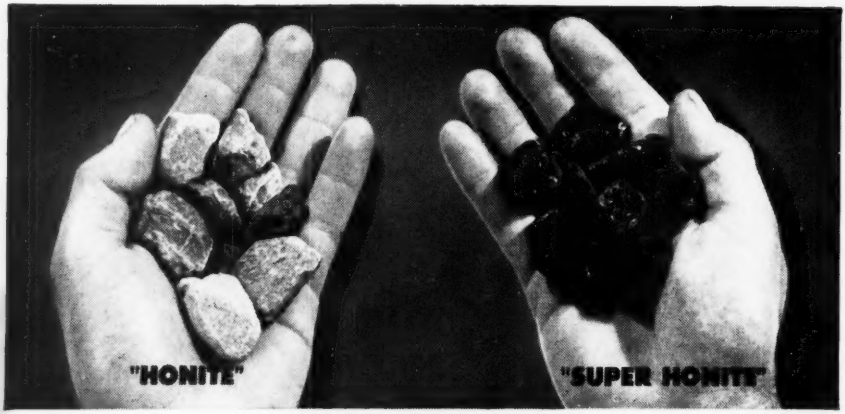

New! Two tough chips speed barrel finishing

Get smoother, faster barrel finishing with the toughest abrasive chips on the market—"Honite" and "Super Honite!"

"Honite" retains a cutting edge longer than any other *natural* barrel finishing abrasive. It's ideal for fine finishing to close tolerances, and for many other jobs involving a minimum amount of metal removal.

"Super Honite" is a heavy, *synthetic* stone that gives more than twice the life of other abrasives—the only stone engineered for both grinding and finishing.

And, like other stones, "Honite" and "Super Honite" work best in combination with "Honite" Compounds—the "secret of success" for dependable, consistent finishing results.

Stop expensive "guessing" for the *right* materials and methods! Experienced 3M Engineers are ready to work with you to help you get best barrel finishing results at the lowest possible cost. Use coupon below for complete information and a copy of "3M Barrel Finishing." No obligation.

Minnesota Mining & Mfg. Co.
Dept. PF-652, St. Paul 6, Minn.

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Honite® BRAND

BARREL FINISHING CHIPS • COMPOUNDS • EQUIPMENT

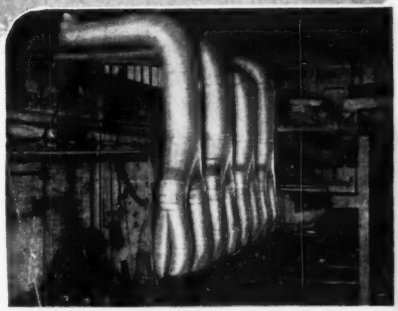
Made in U.S.A. by MINNESOTA MINING & MFG. CO., St. Paul 6, Minn., also makers of "Scotch" Brand Pressure-sensitive Tapes, "Scotch" Sound Recording Tape, "Underseal" Rubberized Coating, "Scotchlite" Reflective Sheeting, "Safety-Walk" Non-slip Surfacing, "3M" Adhesives. General Export: Minn. Mining & Mfg. Co., International Division, 270 Park Avenue, New York 17, N. Y. In Canada: Minnesota Mining & Mfg. of Canada, Ltd., London, Canada.

Ohio FUME AND DUST REMOVAL SYSTEMS
TANGIBLE DOLLAR SAVERS

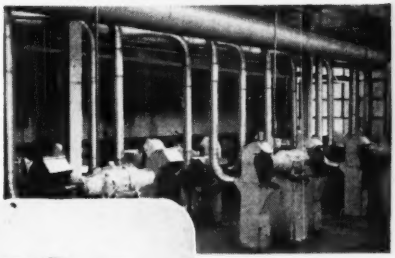
● Records on hundreds of Ohio Blow Pipe jobs prove without question that production output materially increased and employee absence and complaints radically decreased after the installation of an Ohio System for ventilation of fumes from plating and rinse tanks and dust collection from grinding, polishing and buffing.

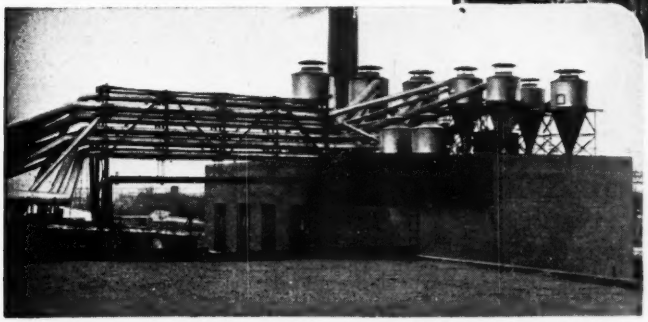
Ohio Systems are not standard fit-all systems. They are designed and engineered to meet your individual requirements. Ohio engineers, thoroughly experienced in their field, make a careful, exacting survey of your plant and an analysis of conditions and then plan the system that will meet most efficiently your special needs and conditions.

Call, write or phone today and let Ohio engineers make a survey and give you, without obligation, an estimate.



Fumes Removal Installation in Plating Room





Dust Collecting System for Buffing Machines

Cyclone Type Dust Collectors

Write today for free illustrated color folder showing you how an "Ohio" system protects your profits.

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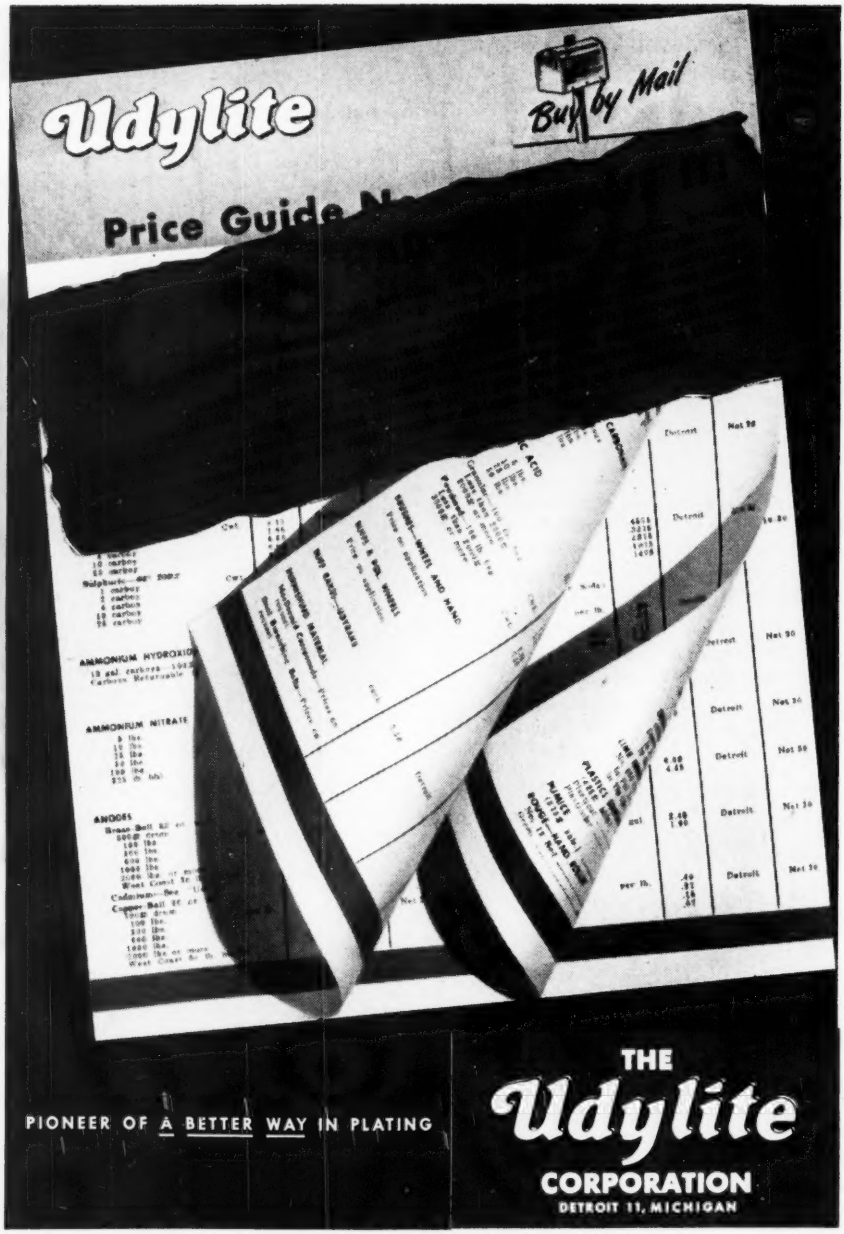
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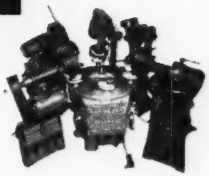
Hammond Machinery Builders INC.

There is no substitute for EXPERIENCE

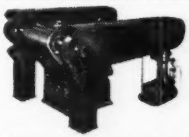
With the new and better constantly coming into the picture and the old going out, these 70 years have not been long.

Even so, they have piled up a big bank of experience to which we add and draw from each day.

We are grateful for the confidence of tens of thousands of HAMMOND users. For them and for all, through ever broadening research, engineering, and production, we propose to insure another 70 active and eventful years.



Model K-46-6 Super 5 Head Rotary Automatic. (One of a line of Rotary, Strait-Line, and Jr. Automatics).
WRITE FOR CATALOG A 50



Model VRO "DIAL CONTROLLED" Variable Speed Polishing Lathe with Model 3-A (air-tensioned) Backstands.
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MODEL RRO Single Speed—Two Spindle — Two Motor Polishing and Buffing Lathe. Each spindle can be driven at speeds from 1800 to 3600 RPM.
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Hammond Machinery Builders INC.
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A COMBINATION THAT IS HARD TO BEAT

Cowles

KW *and* SK

All subsequent cleaning operations are reduced to a minimum by using K W alkaline cleaner and S K emulsion type cleaner together in the pre-soak operation. These two fast acting, efficient and economical cleaners do a real job of removing oils and stubborn soil when used in combination.

K W Cleaner alone will handle all cleaning operations after the soak cleaning. It can be used in still tanks—with or without electric current.

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PROMPT SHIPMENTS FROM LOCAL STOCKS

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METAL CLEANER SPECIALISTS — CLEVELAND 3, OHIO

pf editorial

Vol. 16, No. 9

JUNE, 1952

The A.E.S.--Aims, Growth and Service

The pioneers of New York, Philadelphia, and Toronto who organized the Electroplaters' Association in 1909 were part of a trend. Many of the technical societies of today had their beginnings around the turn of the century. It is not, I think, coincidence that industry as we know it began to grow up at about the same time; technical societies provide a means for exchange of information essential to technical progress generally recognized and accordingly supported by progressive managements.

When the rapidly expanding Electroplaters' Association changed its name to the American Electroplaters' Society and became a corporation in 1913, its object, which remains unchanged today, was stated to be "the improvement and dissemination of the knowledge of the arts and sciences of electroplating and of finishing metals and of allied arts, and the development of a cooperative spirit of friendship and mutual assistance among its members."

Indirectly as well as directly, the American Electroplaters' Society, guided by this two-fold purpose—which in essence is the reason for being of all technical societies—has spearheaded the development of its field. Year by year our store of knowledge has been added to by a steady stream of technical papers and discussions. Many but not all of them flow through A.E.S. channels; some are contributed by other organizations and by trade journals which serve our industry so well. The unique A.E.S. research program, now full grown, acknowledges the generous support given it in both dollars and talent with an abundant output of fine results.

A new chapter in the book on "the arts and sciences of electroplating and of allied arts" will be written this June in Chicago at the 39th Annual Convention and 3rd Industrial Finishing Exposition.

Conventions are of particular importance to A.E.S. They not only bring together men skilled in the performance of electroplating operations and men mainly interested in the science of electrodeposition, but also create a mood of receptiveness to new ideas that makes possible the mutual understanding so necessary to practical progress.

C. F. Nixon

—PRESIDENT, AMERICAN ELECTROPLATERS' SOCIETY

AMERICAN ELECTRO PLATERS SOCIETY

39TH

ANNUAL A.E.S. CONVENTION
CHICAGO • JUNE 16-19
3RD INDUSTRIAL FINISHING EXPOSITION

The Conrad Hilton Hotel (left), convention headquarters, and Grant Park (lower left) adjacent to the hotel across Michigan Ave.

Looking north on Michigan Ave. (right) with the Wrigley Building on the left and the Tribune Tower on the right.

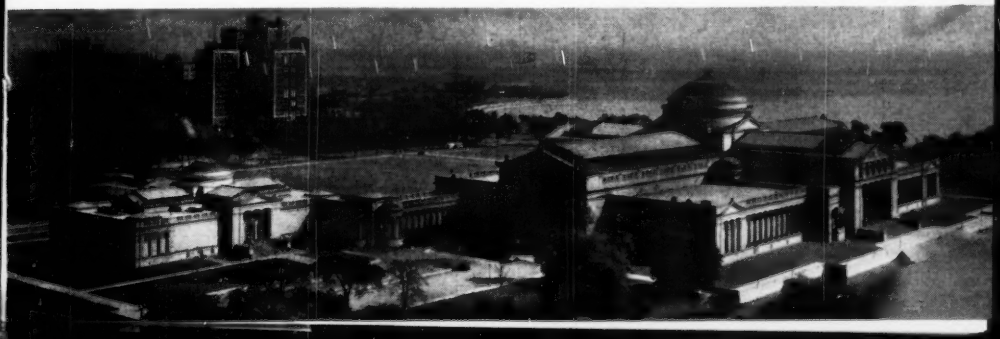
The Museum of Science and Industry (below) in Jackson Park on Chicago's Lake Front.

YOUR hosts, the Chicago Branch and their assistants, the Rockford and St. Joe Valley Branches, have overlooked nothing to provide the finest, most entertaining convention program ever offered to A.E.S. members and their guests.

Unquestionably, attendance at the six technical sessions will enable you to take home valuable ideas for improvement and better handling of many phases of your own shop operations. In the event the brain becomes too fatigued by concentration on technical affairs, the entertainment and program committees have interspersed social affairs and free time.

The Metal Finishing Suppliers' Association, Inc., although changed in name remains unaltered on the social side, and the International Fellowship Club, still tops in entertainment, invites all registrants to share an informal night of fun, food and frolics with them on Monday night in the Grand Ballroom, Conrad Hilton Hotel.

Of course, during your free time you will undoubtedly want to visit the International Amphitheatre where you can get a really good look at the fine equipment and new finishing processes displayed at the Third Industrial Finishing Exposition.



Clyde Kelly
General Chairman

Welcome to Chicago

Marion Longfield
Co-Chairman

Greetings:

It is the hope of the various committees who participated in this Convention that everyone will avail himself of the many opportunities presented here for his pleasure and instruction. To this end a calendar of daily special events has been prepared and is outlined in the following pages.

If anyone wants company on his daily rounds, the Reception Committee will assist him in looking up an old friend, or meeting a new one—we hope many of both.

The better half (the Ladies Division) will be making convention history in that their committee has planned new activities, starting with the selection of a queen, and then on to a gala program.

Especially do we want everyone, including the women, to attend the Industrial Finishing Exposition because of the new methods, new materials, and new equipment which will be on display. For example, there will be a plating demonstration operated by the Chicago Electro-Platers Institute which will consist of barrel plating, chrome plating, and two well known white brass processings. Free take home samples.

Come, look, listen, learn—and have LOTS of fun.

Sincerely yours,

Clyde Kelly
General Chairman

Marion Longfield
Co-Chairman

D. G. Foulke
Executive Secretary

Cleveland F. Nixon
President

William J. Neill
Past President

PROCLAMATION

WHEREAS, more than twenty thousand business executives, production supervisors, and research engineers will assemble in Chicago on the sixteenth, seventeenth, eighteenth and nineteenth days of June, 1952, under the auspices of the American Electroplaters' Society, sponsor of the Industrial Finishing Exposition of 1952; and

WHEREAS, nationally prominent scientists in the field of electroplating and government leaders will address the American Electroplaters' Society's 39th Annual Convention at the Conrad Hilton Hotel; and

WHEREAS, a prime purpose of the Industrial Finishing Exposition of 1952 is to inform Chicago's business and industrial leaders of the latest techniques, processes and services in the metal finishing field; and

WHEREAS, the American Electroplaters' Society, through its Exposition and Convention, will add to Chicago's prestige as the nation's outstanding center for metal finishing of all kinds;

NOW, THEREFORE, I, Martin H. Kennelly, Mayor of the City of Chicago, do hereby proclaim the week of June 15 through June 21, 1952 as INDUSTRIAL FINISHING WEEK IN CHICAGO, and recommend and urge that full advantage be taken by our citizens of this opportunity to acquaint themselves with the men, industries and educational institutions responsible for the present high standard of industrial finishing.
Dated this 2nd day of June, A. D., 1952.

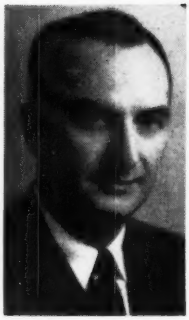
Martin H. Kennelly
Mayor

F. J. MacStoker
First Vice President

George P. Swift
Second Vice President

R. A. Schaefer
Third Vice President

H. A. Gilbertson



C. F. Nixon

Leonard Weeg

Wm. Geissman

A. E. S. Convention Committees

CLYDE KELLY, General Chairman

MARION LONGFIELD, Co Chairman

H. A. GILBERTSON, Advisory

W. O. Zinn

J. M. Andrus

Dr. J. H. Monaweck

Harold Smallman

Ralph Wysong

R. J. Hazucha

Edward Stanek

Dr. H. J. Weisner

Hotel, Banquet, Entertainment — R. J. Hazucha, chairman; Hotel co-chairman, Harold Smallman.

Detroit — C. F. Nixon.

Rockford Branch—Leonard Weeg, Wm. Geissman.

St. Joe Valley Branch — Dr. H. J. Weisner, Ralph Wysong.

Plant Visitation—W. O. Zinn.

Educational — J. M. Andrus.

Finance — Dr. J. H. Monaweck.

Publicity — R. F. Ledford.

Registration — Harold Faint.

Woman's Committee — Mrs. Marion Longfield, chairman; Mrs. Ralph Wysong, Mrs. Wm. Geissman, Miss Irene Donnelly, Miss Mary Loftus, Mrs. Harold Faint, Mrs. Orville Kocour, Mrs. Paul Glab, Mrs. Elmer Olson, Mrs. Edward Stanek, Mrs. Edward Stack, Mrs. Ray Ledford, Mrs. Cyril Kocour.

Branch Exhibits — Harry Hansen.

Program — Klem Petrosius.

Transportation — Elmer Olson.

Sergeant-at-Arms — Edward Stanek.

Harold Faint

Elmer Olson

Raymond F. Ledford

Harry Hansen

General Program

SUNDAY, JUNE 15

1:00 P.M.—Chicago Electro-Platers Institute, Brunch and Meeting, Conrad Hilton Hotel.
For members only.

2:00 P.M.—Metal Finishing Suppliers' Association, Inc., Board of Directors' Meeting, Conrad Hilton Hotel.

3:00 P.M.—Registration, Third Floor, Conrad Hilton Hotel.
The registration fee of $15.00 will provide each registrant with a book of tickets to the various technical and social events. An office located on the third floor of the Conrad Hilton Hotel will be open from 9:00 A.M. to 5:00 P.M. for the convenience of visitors. Registration till 8:00 P.M.

MONDAY, JUNE 16

8:00 A.M.—Registration, Third Floor, Conrad Hilton Hotel.

10:00 A.M.—Opening Session, Grand Ballroom, Conrad Hilton Hotel.
Invocation— THE REVEREND FRANK MESLE, Oneida.
Greetings from the Chicago Branch—RAYMOND F. LEDFORD, President.
Welcome to Chicago—CLYDE KELLY, Chairman.
Drawing—for the Queen of the Convention and her two attendants.
Greetings from the A.E.S. President——CLEVELAND F. NIXON.
Keynote Address:
MICHAEL DI SALLE

11:30 A.M.—Business Meeting, Conrad Hilton Hotel.
Delegates only.

12:00 Noon—International Fellowship Club, 28th Annual Luncheon, Conrad Hilton Hotel.
This luncheon is exclusively for equipment and supply manufacturers, distributors, and their representatives.

Though Educational Sessions will be held in the Stock Yards Inn, and the Third Industrial Finishing Exposition will be in the International Amphitheatre, General Headquarters for the Convention will be the Conrad Hilton Hotel, 8th and Michigan.
Transportation by buses, at regular intervals, has been arranged. Early each day buses will begin leaving the Conrad Hilton Hotel. For those who prefer to drive their own cars to the Exposition and Educational Sessions, a map of the city marked with convenient routes will be provided in the program book.

NEW! FIBERGLAS TANKS by MAC DERMID INCORPORATED

Laminex Tanks are the only Fiberglas type tanks manufactured by a patented method using matched steel molds. Be sure and ask our representative for complete information on these new corrosion-resistant, sturdy, low-cost tanks.

COMPARE THESE FEATURES

- Will withstand chemical attack from commonly used acids in normal concentrations . . . are non-conductive electrically.
- Can be equipped with dam overflow for cold or hot water rinses. Withstands temperatures above boiling.
- Have uniform wall thickness reinforced where necessary with vertical ribs and steel rods molded into tank.
- Are lightweight (2' x 2' x 3', tank weighs approximately 60 pounds).
- Have high impact resistance.
- Are non-corrosive, inside and out.
- Smooth, permanent white interior of tank makes dip room more attractive.

WRITE FOR PRICE LIST ON STANDARD SIZES.

Sold and Serviced by

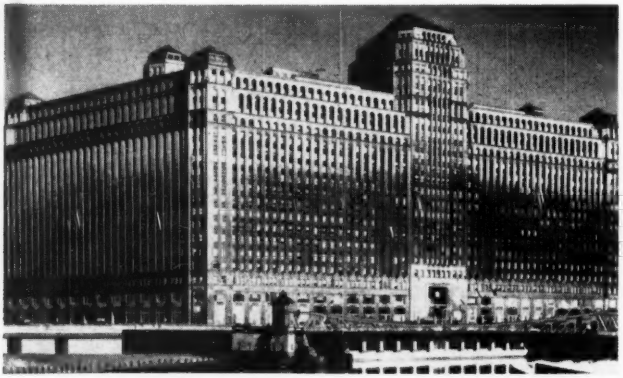
MAC DERMID
★ *Incorporated* ★
WATERBURY 20, CONNECTICUT

Complete Suppliers To The Metal Finishing Industry . . .

12:30 P.M.—The Third Industrial Finishing Exposition, International Amphitheatre, opens.
Exposition open until 8:00 P.M.
12:30 P.M.—Speakers Luncheon, Little Gallery, Stock Yards Inn.
1:00 P.M.—Metal Finishing Suppliers' Association, Inc., First Annual Business Meeting, Conrad Hilton Hotel.
For members and prospective members.
2:00 P.M.—Technical Session "A," Ballroom, Stock Yards Inn.
2:00 P.M.—Technical Session "B," Saddle & Sirloin Club Room, Stock Yards Inn.
8:30 P.M.—Open House Party, International Fellowship Club, Grand Ballroom, Conrad Hilton Hotel.
A night of informal gaiety and good fellowship, through the courtesy of our good friends, the Metal Finishing Suppliers' Association, Inc.
Refreshments, Music, Dancing, Buffet (served at 10:00 P.M.) Crowning of the Convention Queen—By A. P. MUNNING, President.

TUESDAY, JUNE 17

7:45 A.M.—Secretaries Breakfast, Lipton Room, Stock Yards Inn.
7:45 A.M.—Fund Raisers Breakfast, Founders Hall, Stock Yards Inn.
8:00 A.M.—Speakers Breakfast, Little Gallery, Stock Yards Inn.
9:00 A.M.—Third Industrial Finishing Exposition, International Amphitheatre.
Open until 5:00 P.M.
9:00 A.M.—Registration, Third Floor, Conrad Hilton Hotel Until 12:00 Noon.
Banquet table reservations.
9:00 A.M.—International Fellowship Club, Annual Golf Tournament.
Courtesy of Metal Finishing Suppliers' Association, Inc., Exact time and place and other details will be posted on the Bulletin Board.
9:00 A.M.—Second Technical Session, 1st Floor Ballroom, Stock Yards Inn.
12:30 P.M.—National Association of Metal Finishers, Luncheon and Meeting, Founders Hall, Stock Yards Inn.
2:00 P.M.—Third Technical Session, Saddle & Sirloin Club Room, Stock Yards Inn.



The Merchandise Mart, colossus of trade, is twenty-four stories high, two blocks long, one block deep, and houses approximately five thousand lines of merchandise. About twenty-six thousand persons constitute the working population.
(Photo courtesy the Chicago Association of Commerce and Industry.)

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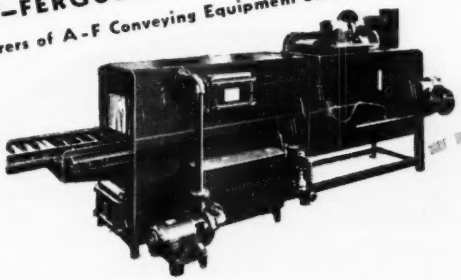
THE ALVEY-FERGUSON CO. 625 Disney St. Cincinnati 9, Ohio

Manufacturers of A-F Conveying Equipment and Washing Machines for Industry



WEDNESDAY, JUNE 18

8:00 A.M.—Speakers Breakfast, Little Gallery, Stock Yards Inn.

8:00 A.M.—Registration, Third Floor, Conrad Hilton Hotel Until 12:00 Noon.
Please exchange your banquet ticket for table reservations.

9:00 A.M.—Fourth Technical Session, First Floor, Stock Yards Inn.

12:00 Noon—Third Industrial Finishing Exposition, International Amphitheatre.
Until 10:00 P.M.

12:30 P.M.—Research Committee, luncheon and meeting, Conrad Hilton Hotel.
For members only.

2:30 P.M.—Soft Ball Game, East vs. West, Grant Park, Opposite Conrad Hilton Hotel.
Full details will be available at convention time.

THURSDAY, JUNE 19

7:45 A.M.—Research Committee Breakfast, Lipton Room, Stock Yards Inn.

8:00 A.M.—Registration, Third Floor, Conrad Hilton Hotel.
Desk open until 12:00 noon for final banquet table reservations.

9:00 A.M.—Third Industrial Finishing Exposition, International Amphitheatre.
Until 5:00 P.M.

9:00 A.M.—Fifth Technical Session, Report on A.E.S. Research Program, First Floor Ballroom, Stock Yards Inn.

2:00 P.M.—Final Business Meeting, American Electroplaters' Society, North Ballroom, Conrad Hilton Hotel.

7:00 P.M.—Annual Banquet.
Fine Food, Good Music, Fine Entertainment, Dancing, Drawing for Hanson-Van Winkle-Munning Company's Prizes.

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• ***FASTEST IN ACTION*** • ***LOWEST IN PRICE***
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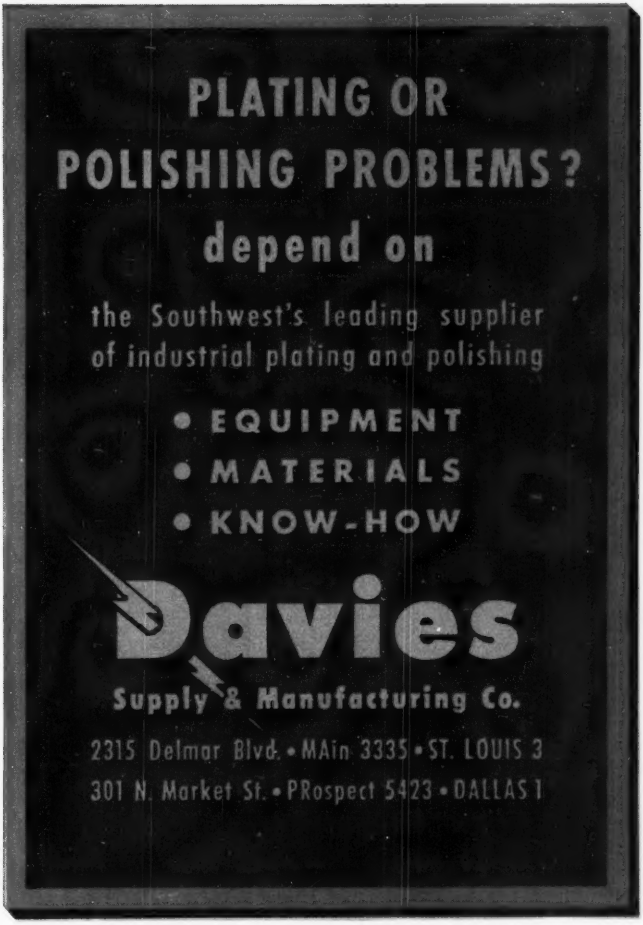
Specify whether dip or brush type is desired

ALLIED FINISHING SPECIALTIES CO., 2645 W. GRAND AVE. CHICAGO 12, ILLINOIS



Southwestern Sales and Service Representatives for these Famous Firms:

- THE UDYLITE CORPORATION
- JOSEPH R. DAVIES & ASSOC. ("Joe-D" Sisal Buffs)
- R. O. HULL & COMPANY
- INDUSTRIAL ELECTROPLATING COMPANY (Niehaus Fume Separators)
- MacDERMID, INC.
- TOPPER EQUIPMENT COMPANY
- FREDERIC B. STEVENS, INC.
- ALROSE CHEMICAL COMPANY (Jetal Process)
- ALLIED RESEARCH PRODUCTS (Iridite)
- ALMCO DIVISION, QUEEN STOVE WORKS

News about UNICHROME

Trade Mark

EFFICIENT INSULATION ASSURES MORE EFFICIENT PLATING

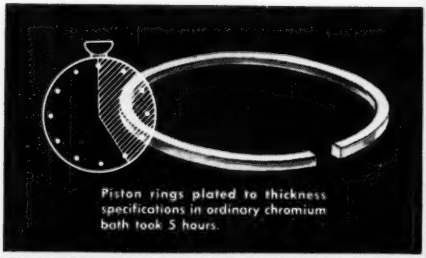
Use of proper insulations not only improves plating results but also saves current and metals. Unichrome Stop-Off Compounds and Lacquers are noted for ease and economy of application on the work to be plated; Unichrome Coating 218X for the long lasting protection it gives to racks despite the toughest plating and cleaning cycles.

Tantalum Coils Last and Last

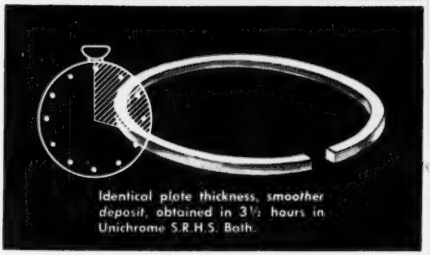
Installing a Unichrome Heating Coil or Heat Exchanger with tantalum tubes is good economy. Giving trouble-free service in acid baths for remarkable periods of time, the tantalum virtually eliminates maintenance, downtime and loss of valuable plating production. At one plant, a tantalum coil has already seen 4 years of service and is still as good as the day installed.

Unichrome

Big Improvement



Piston rings plated to thickness specifications in ordinary chromium bath took 5 hours.



Identical plate thickness, smoother deposit, obtained in 3½ hours in Unichrome S.R.H.S. Bath.

Lower temperature copper bath usable in nickel tanks

Especially important to the plater substituting copper for nickel is the fact that Unichrome Pyrophosphate Copper Bath, operating at only 110° to 140° F, can be used in nickel tanks with rubber or plastic linings.

Saving the cost of converting the tank is not the only benefit. The Unichrome Copper Process maintains a wide plating current range, and without brighteners, deposits a smooth plate excellent for direct plating with chromium. It contains no cyanide to dispose of. Bulletin CU-2 gives more data.

S.R.H.S. Chromium Solution works a

in Hard Chromium Plating

■ There's a big difference in the hard chromium plating operations of many plants nowadays. It has been simplified, speeded up, and consistently better results assured – all through installation of the Unichrome S.R.H.S. Chromium Bath. The improvements reveal themselves in many ways.

A REAL GAIN IN OUTPUT

Especially in hard chromium plating, where it often takes many hours to deposit the specified thickness of chromium, the higher plating speed of S.R.H.S. Chromium works wonders. Cutting plating time by 20 to 50%, it helps to boost production without extra equipment. For example, piston ring plating takes 3½ hours now, instead of the 5 it used to at one plant. Another plant plates .005" of chromium on steel bushings in 2½ to 3 hours – half the usual time – by using a Unichrome S.R.H.S. Chromium Bath. And the deposit is smoother, too.

MANY PRODUCTION ADVANTAGES

Unichrome S.R.H.S. Chromium Solution deposits chromium with less "treeing". Its "leveling action" also assures a smoother plate. Both these features mean less need to deposit excess chromium to allow for grinding and final finishing – thereby saving additional plating and production time.

As a self-regulating bath, Unichrome S.R.H.S. Chromium not only minimizes control problems, but also maintains top throwing power and reduces rejects.

LOSS OF FATIGUE STRENGTH MINIMIZED

Chromium plating is known to reduce fatigue strength of steel. Recent research has proved, however, that parts plated in the Unichrome S.R.H.S Chromium Bath have the smallest loss of fatigue strength. Here are some results on heat-treated test specimens plated with 0.001" of chromium as reported by an independent laboratory:

Chromium Plating Solution	Fatigue Strength psi	% Loss Over Unplated
Unplated	81,500	—
Ordinary	60,500	25.7
SRHS CR-100	75,200	7.7
SRHS CR-110	75,300	7.6

★ ★ ★

Write or phone the nearest United Chromium office for more information on getting better chromium plate for defense or industrial applications. Electroplating engineers will be glad to show you how you can meet specifications in less time and with less trouble by means of the S.R.H.S. Chromium Bath.

UNITED CHROMIUM, INCORPORATED
100 East 42nd Street, New York 17, N. Y.
Detroit 20, Mich. • Waterbury 20, Conn.
Chicago 4, Ill. • Los Angeles 13, Calif.
In Canada:
United Chromium Limited, Toronto, Ont.

A Lady Quotes

Mrs. Marion Longfield

"WIVES enjoy going to clubs, especially if the latter are men's organizations. They like to invade man's domain. Husbands and wives should purposely cultivate the habit of sharing their recreation together. That is a mark of true emotional adulthood."

This year the women will take a prominent part in the opening session of the A.E.S. Convention, for here they will choose the QUEEN of the Convention. Many exciting and attractive ideas will spring up around the selection and entertainment of their Queen.

Ladies' Headquarters will be the North Assembly Room, on the third floor of the Conrad Hilton Hotel. During your leisure hours use it as a meeting place, or use it to relax in comfort, play cards or visit with your friends. Information, messages and notices will be posted on a convenient bulletin board. At all times one of the ladies' committee will be there to assist you with arrangements for the various broadcasts, breakfasts, bonnets, and so forth.

Arrangements have been made for the ladies to be taken care of at all times their husbands are busy with necessary convention affairs.

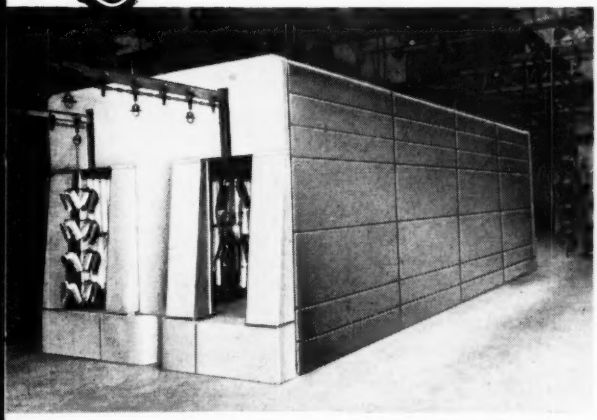
A very warm and courteous invitation is extended to you by the Ladies' Committee.

MRS. MARION LONGFIELD, *Chairman.*

Left to right, standing: Miss Irene Donnelly, Miss Mary Loftus, Mrs. Howard Faint, Mrs. Marion Longfield, Mrs. Orville Kocour, Mrs. Paul Glab. Seated: Mrs. Elmer Olson, Mrs. Edward Stanek, Mrs. Edward Stack, Mrs. Ray Ledford, Mrs. Cyril Kocour.

Only PAN-L-HEAT Ovens

OFFER ALL THE ADVANTAGES OF INFRARED PLUS THESE 8 FEATURES



TYPICAL (MULTIPLE-PASS) OVEN INSTALLATION

For most processing applications up to 650° F. where heat may be applied to the product surface.

YOU CAN BUY IT FOUR WAYS FROM JENSEN

1. PANELS—for localized heating.
2. BOOSTER SECTIONS—to increase the capacity or temperature of existing ovens.
3. COMPLETE OVENS—with ventilation; electrical and temperature controls for new installations.
4. COMPLETE FINISHING SYSTEMS—including Pan-L-Heat Ovens, conveyors, spray booths, dip tanks, and metal cleaning equipment, as required.

SEND FOR 16-PAGE BROCHURE OF FACTS—JUST OFF THE PRESS

1. **SAFE-T-WALL CONSTRUCTION.** Draw-out panels vent interval pressure in event of hazard. Permits external servicing of all vital parts, de-energized with automatic disconnect.

2. **FASTER, RESPONSIVE ELECTRIC HEAT** (2½ KW/Sq. Ft.). Saves space; provides cleaner operation and better working conditions.

3. **BALANCED THERMAL DESIGN** provides *cost savings* through lower power consumption.

4. **THREE-PLANE HEAT DISTRIBUTION** for products of any size, any shape, any color.

5. **INVISIBLE ZONE, HEAT CONTROL.** Pays dividends on reject losses that don't happen.

6. **HOT (CONDENSATION-FREE) REFLECTORS.** Highest lifetime efficiency; lowest maintenance.

7. **CLASS A THROUGHOUT**—no fuel hazard. Meets industry and insurance standards for flammable vapor and combustible material hazards. (JIC controls available.)

8. **NON-FRAGILE, LONG-LIFE, SPACE-SAVING, INSULATED CONSTRUCTION.** Sprinkler water fire protection causes no damage to equipment. Demountable frame construction may be converted from one application to another without necessity for cutting or welding.

Jensen SPECIALTIES, INC.
ADVANCE HEATING DIV.
9331 Freeland Avenue,
Detroit 28, Michigan

Ladies' Program

LADIES' HEADQUARTERS WILL BE IN THE NORTH ASSEMBLY ROOM, THIRD FLOOR, CONRAD HILTON HOTEL.

SUNDAY, JUNE 15

3:00 P. M.—Registration, Third Floor, Conrad Hilton Hotel.
The registration fee of $15.00 will provide each registrant with a book of tickets of admission to certain Convention functions and activities listed in this program.

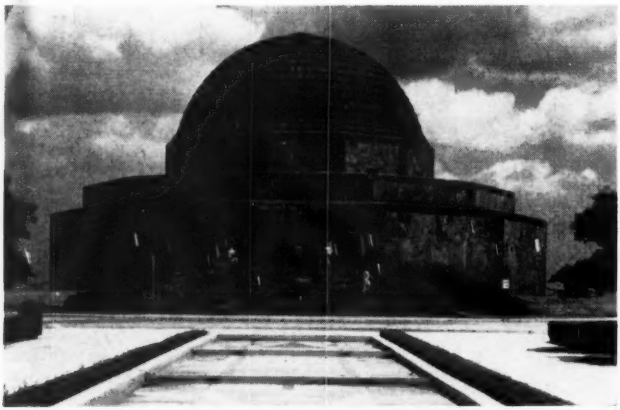
MONDAY, JUNE 16

8:00 A.M.—Registration, Third Floor, Conrad Hilton Hotel.

10:00 A.M.—Opening Session, Grand Ballroom, Conrad Hilton Hotel.
Ladies will join the men. Before the close, a drawing for the Queen of the Convention will be held. Three tickets will be drawn, two for her attendants. These ladies must be present at the time of drawing and over 16 years of age.

3:10 P. M.—Transportation—to Marshall Field & Company.
8th Street Entrance, Conrad Hilton Hotel.

3:45 P. M.—Tea and Style Show, Narcissus Room, Marshall Field & Company.
Conducted by Field's eminent stylist, the hostesses will be Mrs. R. F. Ledford, Mrs. Harold Faint, Mrs. E. F. Stack, and Mrs. William Geissman.



The Adler Planetarium, an outstanding institution of its type in the western hemisphere, was built a few years ago as an addition to the group of buildings on Chicago's Lake Front. An exact reproduction of the celestial orbit may be witnessed here daily. *(Photo courtesy the Chicago Association of Commerce and Industry.)*

VAPOR DEGREASING
meets aircraft industry's demand for
FAST, EFFICIENT METAL CLEANING

For peak efficiency in metal cleaning use DU PONT "TRICLENE" D

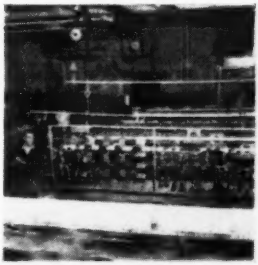
TRICHLORETHYLENE

"Triclene" D Trichlorethylene is the ideal solvent for vapor degreasing. Developed by Du Pont after years of research, it is non-flammable, stable and pure . . . stands up under moisture, air, heat and other destructive influences . . . and can be readily recovered for economical re-use. In short, "Triclene" D possesses *all* of the properties needed for the efficient and economical operation of a modern degreasing installation.

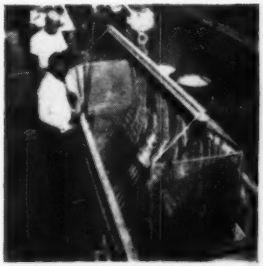
"Perclene" Perchlorethylene—another Du Pont solvent for vapor degreasing—is particularly suitable for operations requiring a high-boiling solvent. Like "Triclene" D, "Perclene" is a non-flammable, synthetic solvent of high purity.

DU PONT TECHNICAL SERVICE

A call to your Du Pont Solvent Distributor will bring prompt, practical advice from experienced technicians in the metal cleaning field. They'll be glad to tell you about "Triclene" D or "Perclene" and assist you on metal cleaning problems.



SMALL AIRCRAFT PARTS are vapor degreased prior to plating for thorough removal of cutting compounds. Compact vapor degreasing equipment is economical to use, simple to operate, easy to maintain.



ALUMINUM "SKIN" SECTIONS emerge thoroughly cleaned, instantly ready for the next process. Vapor degreasing cleans sections of any size or shape . . . saves time and cost in subsequent handling and finishing.

Speed and efficiency in metal cleaning are essential to production in modern aircraft plants. Vapor degreasing with Du Pont "Triclene" D Trichlorethylene meets these requirements . . . removes lubricants, quenching oils and protective grease from all types of aircraft tubing, machined parts and sheet metal sections. Parts come out thoroughly cleaned—usually in less than a minute!

Compact vapor degreasing equipment requires a minimum of valuable floor space in today's "stepped-up" production lines. Units handle a variety of different parts . . . can be adapted to manual or mechanized operation. The final cleaning step in each unit—passing the parts through pure "Triclene" D vapors—leaves each piece clean, warm and dry, ready for assembly or further processing. And cleaning costs remain low, since a large part of the contaminated solvent is recovered for economical re-use.

Perhaps vapor degreasing can mean increased efficiency in *your* metal cleaning program. The coupon below will bring you complete information.

Mail this coupon for facts on vapor degreasing

non-
DU PONT *flammable* SOLVENTS for VAPOR DEGREASING
SOLD NATIONALLY THROUGH DISTRIBUTORS

DU PONT
REG. U.S. PAT. OFF.

150th Anniversary

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

E. I. du Pont de Nemours & Co. (Inc.)
Electrochemicals Dept., Wilmington 98, Delaware

Please send me detailed information on Vapor Degreasing: applications, advantages, equipment used, and Du Pont solvents available. We are interested in cleaning _____ products.

Name _____ *Position* _____

Firm _____

Street and No. _____

City _____ *State* _____

8:30 P.M.—Open House Party, International Fellowship Club, Grand Ballroom, Conrad Hilton Hotel.

A night of informal gaiety and good fellowship, through the courtesy of our good friends, the Metal Finishing Suppliers' Association, Inc. Refreshments, Music, Dancing, Buffet (served at 10:00 P.M.) Crowning of the Convention Queen—by A. P. MUNNING, President.

TUESDAY, JUNE 17

11:45 A.M.—Aunt Ella Society Garden Party Luncheon, McKinlock Gardens, Art Institute of Chicago.

Under the auspieces of Oakite Products, Inc., the host will be David X. Clarin (Aunt Ella).

2:30 P.M.—Fullerton Hall, Art Institute of Chicago.

Talk on exhibits of China; paintings; and other art objects. Following the talk, the ladies will be free to roam the galleries. Hostesses will be Mrs. R. F. Ledford, Mrs. Paul Glab, Mrs. Elmer Olson, and Mrs. Ralph Wysong.

WEDNESDAY, JUNE 18

10:00 A.M.—Plato Party, Grand Ballroom, Conrad Hilton Hotel.

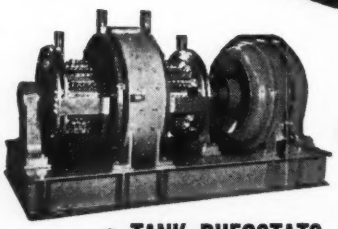
Prizes, and lots of fun. Hostess: Mrs. Joan T. Wiarda.

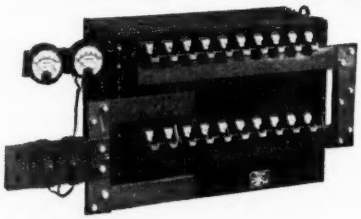
COLUMBIA

MOTOR GENERATORS

for

Electroplating, Anodizing
Electrocleaning, Electropolishing





• TANK RHEOSTATS
• REVERSING SWITCHES
• TONG TEST AMMETERS

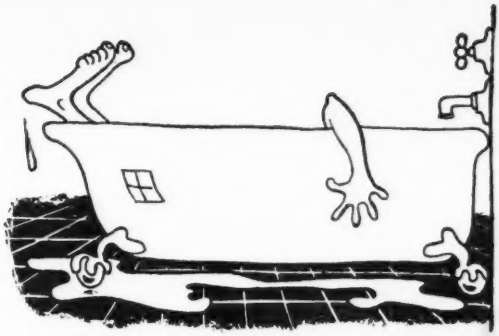
Write for Descriptive Bulletins

COLUMBIA ELECTRIC MFG. CO.

4535 HAMILTON AVE. • CLEVELAND 14, OHIO

Murder in the Bath

— but Monel's not the victim



The Acid Brothers — Muriatic-Hydrochloric-Sulphuric — committed this foul deed. But when your pickling equipment is made of Monel® you've got good insurance against them. Monel is tough and highly resistant to corrosion caused by hot pickling solutions. And it will give you years of trouble-free service.

Of course, Monel is harder to get right now. That's because it's on extended delivery, because of defense. So order well in advance—be sure to give your fabricator NPA rating and complete end-use information.

And write today for your free copy of "A Good Start to A Better Finish."

THE INTERNATIONAL NICKEL COMPANY, INC.

67 Wall Street, New York 5, N. Y.

INCO

Monel PICKLING EQUIPMENT

extra life
extra capacity
extra safety

12:30 P. M.—Luncheon, Boulevard Room, Conrad Hilton Hotel.

Followed by:

2:00 P. M.—Monologue by Sulie Harand, well-known impressionist.

Hostesses: Mrs. Orville Kocour, Mrs. Cyril Kocour, Mr. Harold J. Weisner, Mrs. Edward Stanek, and Mrs. Edward F. Stack.

THURSDAY, JUNE 19

9:30 A.M.—Transportation to Exposition, Educational Session, and Luncheon. 8th Street Entrance, Conrad Hilton Hotel.

10:00 A.M.—Visit to Third Industrial Finishing Exposition, International Amphitheatre.

11:00 A.M.—Educational Session and Luncheon, Saddle and Sirloin Club Room of Stock Yards Inn.

"How Detergents Take the Rubbing out of Scrubbing" Gerald A. Lux, Oakite Products, Inc., will present a non-technical, informal talk on the various types of detergents, illustrating the more technical points with a few demonstrations.

Hostesses: Mrs. Paul Glab, Miss Mary Loftus, Mrs. Elmer Olson, Mrs. Edward Stanek, Mrs. Ralph Wysong, and Miss Irene Donnelly.

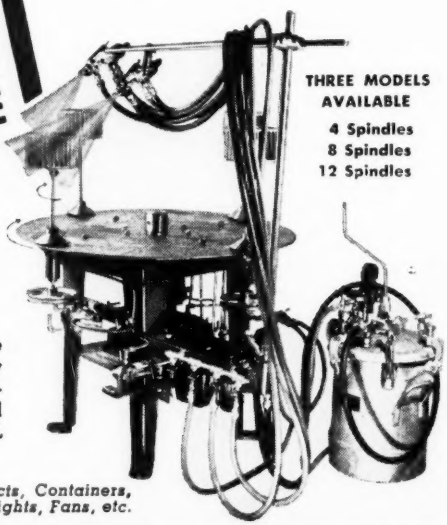
Closing of the Ladies' Program:

Hello to Mrs. Mary F. Robson, chairman of the Ladies' Committee for the 1953 Convention to be held in Philadelphia.

7:00 P. M.—Annual Banquet and Ball, Grand Ballroom, Conrad Hilton Hotel.

Fine Food, Good Music, Fine Entertainment, Dancing, Drawing for Hanson-Van Winkle-Munning Company's Prizes.

HOLLAND
automatic-pneumatic
SPRAYING MACHINE



THREE MODELS AVAILABLE
4 Spindles
8 Spindles
12 Spindles

- **GIVES AN EVEN FINISH**
- **SPEEDS UP PRODUCTION**
- **IMPROVES QUALITY OF PRODUCT**

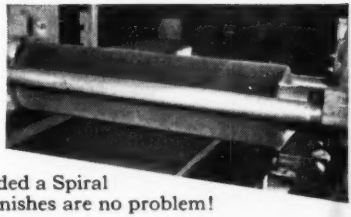
This new fully automatic, portable spraying machine is activated *solely* by air pressure. Only one operator is needed to load, and remove finished and unfinished work. WRITE FOR FULL INFORMATION.

Ideal for spraying: Cans, Novelties, Compacts, Containers, Aluminumware, Electrical Appliances, Flashlights, Fans, etc.

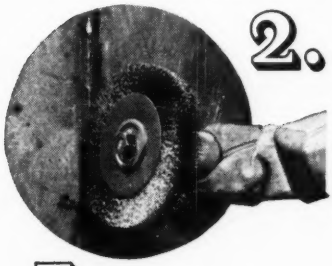
J. HOLLAND & SONS, INC. ▪ 276 SOUTH 9th ST., BROOKLYN 11, N. Y.

How Pittsburgh Brushes IMPROVE QUALITY!

1. Finishing stainless steel sheets!



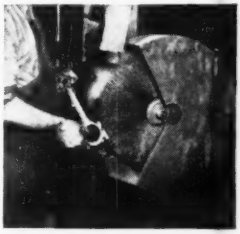
Brushes formerly used by the Eastern Stainless Steel Corp. to produce a dull satin finish on stainless steel sheets were unsatisfactory. Ridging and uneven finish had to be eliminated from these sheets, used to press laminated plastics. Pittsburgh engineers recommended a Spiral Wound Tampico rotary brush—now uniform finishes are no problem!



2. Cleaning welds!

The Globe Company required a brush that would get welds in meat handling equipment *completely clean* and smooth—pockets left in welds might trap food particles. Pittsburgh suggested a coarse wire, extra heavy fill rotary brush. Now pockets are completely eliminated and finishing operations are speeded up.

3. Reconditioning automotive connecting rods!



How to rid reconditioned engine rods of grease, gum, etc., without harming precision surfaces? When Federal Mogul Service presented this problem to Pittsburgh engineers, Pittsburgh recommended a number of standard brushes, mounted on two- and four-horsepower motors. One man now cleans up to 500 pieces a day, *without damage* . . . problem solved!

Let Pittsburgh Engineers Solve Your Brush Problems.

Pittsburgh's complete line of brushes of every type, for every purpose, will provide a practical and economical solution of any brush problem you might have. Drop us a line on your company letterhead for a copy of our new booklet that shows, through actual case histories, how Pittsburgh can help cut your brushing operation costs. Address: PITTSBURGH PLATE GLASS COMPANY, *Brush Div.*, Dept. W-6, 3221 Frederick Ave., Baltimore 29, Md.

PITTSBURGH *Power Driven* **BRUSHES**

BRUSHES • PAINTS • GLASS • CHEMICALS • PLASTICS

PITTSBURGH PLATE GLASS COMPANY

Educational Program

FIRST SESSION

(DUAL SESSIONS)

TECHNICAL SESSION "A"

R. Wysong

Monday Afternoon, June 16, 2:00 P.M.
First Floor Ballroom, Stock Yards Inn

R. WYSONG, Bendix Aviation Corporation Presiding

1—"Improved Plating and Anodizing with Decationized Chromic Acid Solutions."
By LLOYD GILBERT, Rock Island Arsenal, W. S. MORRISON, Illinois Water Treatment Company and FLOYD KAHLER.

2—"Engineering Aspects of Waste Prevention."
By D. MILNE, General Motors Corporation.

3—"Filtration—Theoretical and Practical."
By HAROLD W. FAINT, Industrial Filter & Pump Manufacturing Company and R. SCOTT MODJESKA, Scientific Control Laboratories

Abstracts of Preceding Papers

Improved Plating and Anodizing with Decationized Chromic Acid Solutions, *by Floyd Kahler, Lloyd Gilbert and W. S. Morrison.*

The paper discusses the use of the cationic ion-exchange method of removing contaminating metal ions from hard chromium plating and anodizing solutions. Operating data obtained at Rock Island Arsenal are presented and the advantages gained in the plating and anodizing processes are reported.

Engineering Aspects of Waste Prevention, *by David Milne.*

This paper outlines the trend from overall treatment of waste liquids to recovery and concentration of the metals and materials formerly wasted. The change in thinking on industrial waste control is emphasized and the practices and equipment developed to prevent waste of expensive solutions and eliminate or minimize waste treatment facilities is outlined. Examples are drawn from operating installations and present figures are presented showing the actual savings experienced.

Filtration—Theoretical and Practical, *by Harold Faint and R. Scott Modjeska.*

The first portion of this paper deals with the theoretical concept of filtration, filter designs, filtration media, caking materials, and nature of extractables. This is followed by a discussion of materials of construction for specific applications which then leads to the practical use of specific types of filters for specific problems and trouble shooting in filtration systems.

GOT A FINISHING PROBLEM?
Want the facts on chromate conversion films?
Then be sure to ask about the
IRIDITE
finishes for zinc, cadmium, aluminum and cuprous alloys at
BOOTH S-19 & 20
Industrial Finishing Exposition
International Amphitheatre, Chicago, June 16-20
ALLIED RESEARCH PRODUCTS
INCORPORATED
4004-06 E. MONUMENT STREET • BALTIMORE 5, MD
Iridite is approved under government specification

TECHNICAL SESSION "B"

V. Mattacotti

Monday Afternoon, June 16, 2:00 P.M.
Saddle & Sirloin Club Room, Stock Yards Inn

VINCENT MATTACOTTI, Milwaukee Plating Company Presiding

1—"Some Experiences in Heavy Rhodium Plating."
By DR. H. J. WIESNER, Bendix Aviation Corporation.

2—Film—"The Westinghouse Electroplating Projects Laboratory."
By G. W. JERNSTEDT, Westinghouse Electric Corporation.

3—"An Explanation of Black Nickel Plating."
By EARL J. SERFASS, RALPH F. MURACA and DR. WALTER R. MEYER.

Abstracts of Preceding Papers

Some Experiences in Heavy Rhodium Plating, *by Harold J. Wiesner.*

A short review of previous work on rhodium plating is given as well as the properties of rhodium. Studies of the effects of metal concenitration, temperature, acidity, current density upon rate of deposition of two types of rhodium baths are presented. Effects of impurities and methods of purification are outlined. Methods of control of the bath constituents are discussed. Experiences in operating rhodium baths over several months time on a semi-production basis are related.

A Visit to the Electroplating Projects Laboratories of Westinghouse, dialogue and photography *by George W. Jernstedt.*

This is a colored film with sound accompaniment on magnetic tape showing the type of construction of these laboratories, the various tank arrangements, and examples of the plating research carried out along with the facilities available.

An Explanation of Black Nickel Plating, *by Earl J. Serfass, Ralph F. Muraca and Dr. Walter R. Meyer.*

An explanation of the mechanism of black nickel electroplating is presented as well as of immersion blackening of zinc, iron and other metals in solutions containing thiocyanate and thiosulfate. Thrermodynamic calculations are given to indicate that thiocyanate and thiosulfate ions are reduced to sulfide ions either electrically or by metal dissolution. The mechanism of the reaction and the reason for the use of zinc ions and ammonia are discussed.

TIME SPENT WITH EXHIBITORS IS WELL SPENT

Send NOW for this FIT-ALL
DRUM PLUG WRENCH
Instantly loosens, tightens 95% all plugs or bungs in steel drums
Has 16" extra-strong steel tubing handle. Wgt. only 2 lbs.
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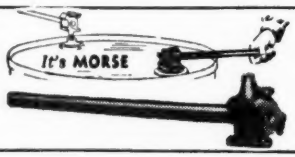

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SECOND SESSION

Frank L. Clifton

Tuesday Morning, June 17, 9:00 A.M.
First Floor Ballroom, Stock Yards Inn

FRANK L. CLIFTON, General Motors Research Laboratories Presiding

SYMPOSIUM ON "MATERIALS OF CONSTRUCTION"

1—"Plastics as Plating Room Engineering Materials."
By D. GARDNER FOULKE, American Electroplaters' Society.

2—"Materials of Construction for Plating Rooms."
By DR. RUSSEL HARR, Western Electric Company.

3—"Materials of Construction for a Waste Water Treatment System at the Chrysler Corporation."
By FRED BRUNE, Chrysler Corporation.

Abstracts of Preceding Papers

Plastics as Plating Room Engineering Materials, *by D. Gardner Foulke.*

The use of plastics in the plating room is discussed, with particular reference to new applications, and materials. The limitations of certain types of plastics and the precautions which should be taken with respect to their use are reviewed. Examples of the newer developments in this field will be shown.

Materials of Construction for Plating Rooms, *by Dr. Russel Harr.*

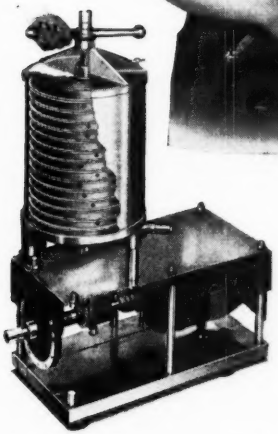
The materials of construction used for the floors and the drainage system are discussed. In the latter case the system is divided to provide for the segregation and batch treatment of water containing cyanides and water containing acid and alkali. Piping systems employed for the transfer of large amounts of acid, liquid caustic and de-ionized water are described. Exhaust duct construction is explained along with the steps taken to protect ducts and fans from corrosion. Tank materials are discussed.

Materials for Construction for Waste Water Treatment System, *by Fred J. Brune.*

The materials used in the construction of a plating waste water treatment system are described and the reason for the selection in each case is given. An evaluation of the materials after two years operation will be presented. The discussion covers sewer lines to the receiving sumps, transfer to reaction tanks and thence to secondary treatment and classification unit and finally to the point of discharge in a public stream.

TIME SPENT WITH EXHIBITORS IS WELL SPENT

guard against Rejects



"Sealed Disc" Filters were designed especially for plating rooms. They're smaller, compact, and more portable than ordinary conventional Filters, and they are performing satisfactory results on many acid dips, electro cleaners, and solvents.

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More and more cost-minded platers depend on Alsop "Sealed Disc" Filters to remove dirt, dust, and sludge from their plating solutions. They get better finished plated work—they save time and labor, and their plating solutions last longer. The "Sealed Disc" Filter assures positive, trouble-free performance that's proof against even the invisible impurities that cause nodules and porousness—proof against rejects and reworking. There's a "Sealed Disc" Filter "to fit your job"—write for complete information, the Alsop Engineering Corporation, 706 Keen Street, Milldale, Connecticut.

ALSOP ENGINEERING CORPORATION

Filters, Filter Discs, Pumps, Tanks, Mixers, Agitators

THIRD SESSION

Tuesday Afternoon, June 17, 2:00 P.M.
Saddle & Sirloin Club Room, Stock Yards Inn

M. M. BECKWITH, Harshaw Chemical Company Presiding

1—"Vacuum Metallizing Today."
By J. GORDON SEITER, F. J. Stokes Machine Company.

2—"Current Distribution in Barrel Plating—A Statistical Study."
By WILLIAM GEISSMAN.

3—"White Brass Plating."
By DR. R. B. SALTONSTALL, The Udylite Corporation.

Abstracts of Preceding Papers

Vacuum Metallizing Today, *by J. Gordon Seiter.*

The process of vacuum metallizing is defined and the applications for which the technique is useful are described. The metals that can be deposited by this method and the materials that can be coated are considered. A description of the operating procedures required, including pre-and post treatments is presented.

Current Distribution in Barrel Plating—A Statistical Study, *by William Geissman.*

This paper is a progress report on a study being made of the variance of deposit thickness encountered in a given load coming from a plating barrel. Statistical methods are applied to the measurements obtained for each load and the principles involved in statistical methods are discussed.

White Brass Plating, *by R. G. Saltonstall.*

The author first presents a brief historical background of white brass plating, then discusses solution composition, operating data, equipment requirements, and the effect of variables on the composition of the alloy deposit. Characteristics of the deposit, solution control, preliminary coatings, available corrosion data and uses are also discussed.

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FAST ALKALINE PICKLE FOR IRON

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ELECTROPLATING CHEMICALS

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NEW HAVEN, CONNECTICUT

FOURTH SESSION

R. E. Pettit

Wednesday Morning, June 18, 9:00 A.M.
First Floor Ballroom, Stock Yards Inn

R. E. Pettit, Chicago Thrift Etching Corporation Presiding

1—"A Critical Review of Substitute Finishes."
By MYRON CERESA, Westinghouse Electric Corporation.

2—"Hard Coatings on Aluminum."
By F. KELLER, Aluminum Corporation of America.

3—"Special Instrumentation in the Plating Room."
By FRANK SAVAGE, Savage-Rowe Plating Company.

Abstracts of Preceding Papers

A Critical Review of Substitute Finishes, *by Myron Ceresa.*

A critical review is presented of the metallic finishes available during the present period of shortages. The difficulties that have been encountered with substitute finishes are discussed and examples are given of items plated with such finishes. Base metal preparation, plate thickness and post-treatment of the plated surface are discussed. Solution to some of the production problems arising from finish changes are reviewed.

Hard Coatings on Aluminum, *by F. Keller.*

The characteristics of newly developed hard coatings on aluminum are presented. The mechanism by which these coatings are formed on different alloys and the relationship between thickness and the hardness of the coatings are discussed. The processes in present use are described.

"Special Instrumentation in the Plating Room", *by Frank Savage.*

The details of automatic pH Control and electronic devices for the control of solution level are described. The use of conductivity measuring instruments to indicate boiler feed-water contamination is discussed as well as unusual instrument uses for ordinary plating operations.

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For a real good polishing job use
Keystone TURKISH Emery
FRESH SUPPLY AVAILABLE
KEYSTONE EMERY MILLS *Write for Sample* 4316 Paul St., Phila., Pa.

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1000 PARTS PER HOUR in Space 16' x 40'

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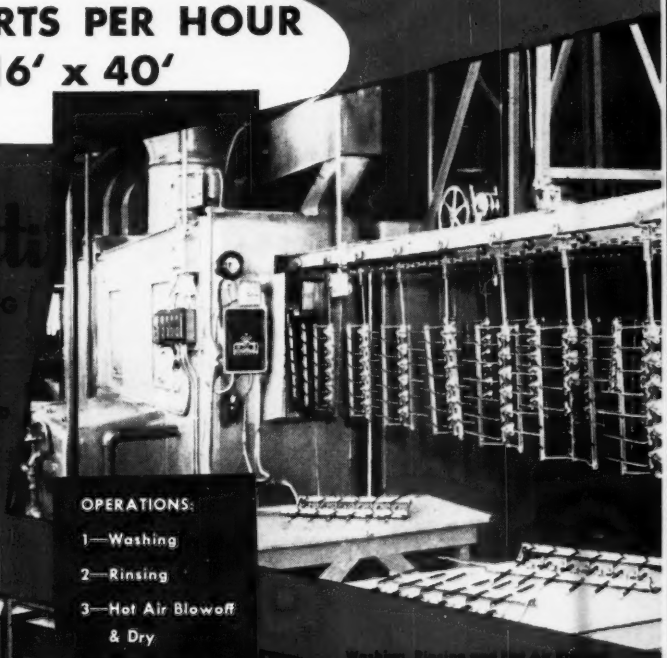
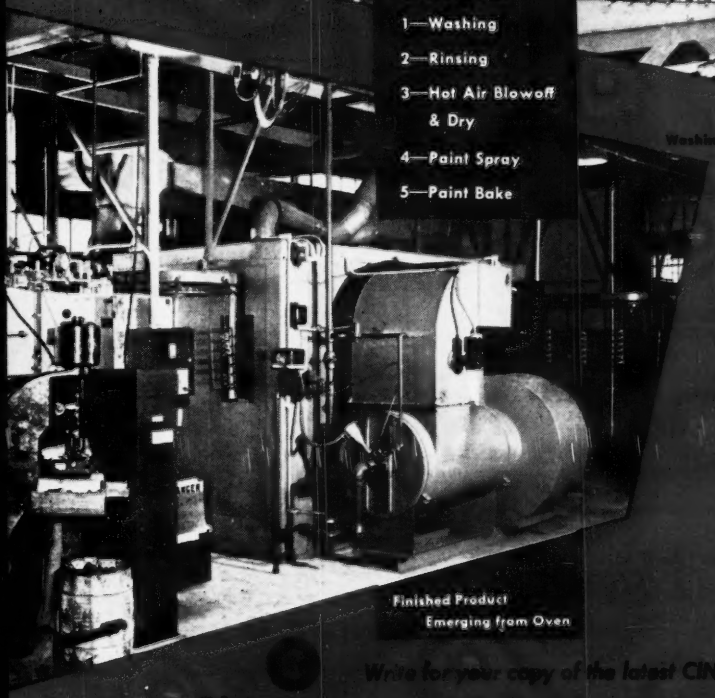


Washing, Rinsing and Hot Air Blowoff

OPERATIONS:

1—Washing
2—Rinsing
3—Hot Air Blowoff & Dry
4—Paint Spray
5—Paint Bake



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Unusually compact, this CINCINNATI-engineered small parts finishing system has proved to be a major improvement in The George R. Carter Company's production facilities. Complete finishing operations on automobile trim hardware parts are performed efficiently and quickly.

With a minimum of adaptation this Cincinnati system can handle a large variety of small parts. Representative installations have shown savings up to 75% in time and cost.

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FIFTH SESSION

Walter L. Pinner

Thursday Morning, June 19, 9:00 A.M
First Floor Ballroom, Stock Yards Inn

Dr. WALTER L. PINNER, Houdaille-Hershey Corporation Presiding

REPORT ON A.E.S. RESEARCH PROGRAM

1—"The Benefits to the Plater of the A.E.S. Research Program."
By E. J. SERFASS, Lehigh University.

2—"Practical Aspects of the Atomizer Test."
By HENRY LINFORD, Columbia University.

3—"Engineering and Economic Aspects of the Treatment of Cyanide Waste."
By B. F. DODGE, Yale University.

Abstracts of Preceding Papers

The Benefits to the Plater of the A.E.S. Research Program, *by Earl J. Serfass.*
The summary of the progress and accomplishments of the A.E.S. Research Committee during the past year is presented. Practical developments of use to the average plater are stressed.

Practical Aspects of the Atomizer Test, *by Henry B. Linford.*
The atomizer test, a new degreasing evaluation method developed in A.E.S. Research Project No. 12, is discussed from the standpoint of plating shop usefulness. Practical applications of the atomizer test which are discussed include: first, the test may be used to check the effectiveness of an operating cleaner on a control basis; second, the test is useful as a check in new cleaner formulations in comparison with those being used in the shop; third, the atomizer test provides a means of evaluating the removal of new soil, the use of which may be contemplated prior to the finishing operation.

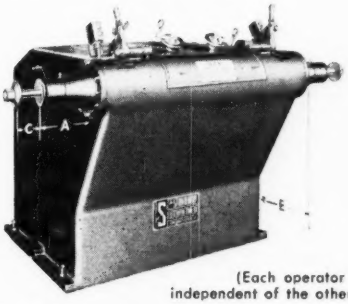
Engineering and Economic Aspects of the Treatment of Cyanide Waste, *by Barnett F. Dodge.*
The various processes studied by A.E.S. Project No. 10, are reviewed and practical data on cost, equipment, and operating hints are presented with regard to the teatment of cyanide wastes.

TIME SPENT WITH EXHIBITORS IS WELL SPENT

For further information on any product mentioned in this issue—use the READER SERVICE CARDS between the covers.

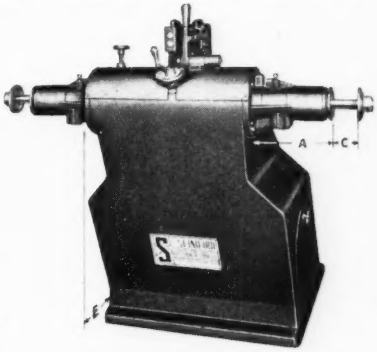
See These Machines In Action In Booth 18, Aisle D at the Industrial Finishing Show . . .

HERE'S PEAK EFFICIENCY THAT SAVES YOU TIME AND MONEY. These machines with their "Speedial" controls give you any spindle speed from 1500 to 3000 R.P.M., Instantly! Other speeds from a minimum of 300 R.P.M. to 15,000 R.P.M.

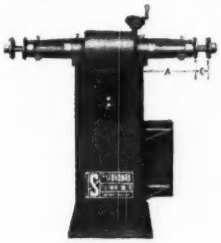


(Each operator is independent of the other.)

Type R2V. Independent Spindles Two 3 H.P., Two 5 H.P., Two 7½ H.P., and Two 10 H.P.



Type RV. 3, 5, and 7½ H.P., and 10 H.P.



Type 1BVP: 1 — 3 H.P. Available in Bench or Pedestal Model in 2 and 4 Ball Bearing Construction.

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- **Maintains peripheral speed throughout wheel life.**
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- **Also available in single or multiple speeds from ½ to 60 H.P.**

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LOWEST "Per Unit Production" FINISH BAKING COST

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THE KEY

MOST EFFICIENT OF ALL FINISH BAKING OVENS

Typical of many thousands of cost-saving Fostoria installations is the oven pictured above at the Tropic-Aire Co. (Div. McGraw Electric). This oven is used to bake gloss white and various color wrinkle-type finishes on electric heaters, roasters, roaster cabinets, etc. The oven is double switched to provide variations for different type finishes. *Baking time for both type finishes is 10 minutes.* Another Fostoria oven handles burn-off of oils and compounds in 3 to 4 minutes. Both ovens are ceiling mounted, saving considerable floor space.

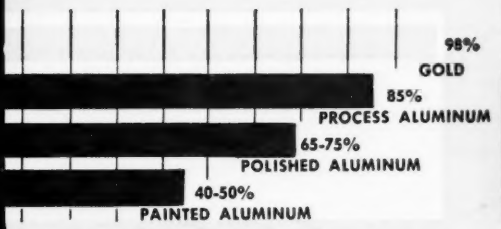
SEND FOR COMPLETE FACTS — Write for this brochure of technical facts on Infra-red with case histories of many installations. Tell us about your particular problem and we will include data directly applicable to your operations.

THE FOSTORIA

it— GOLDEN WALL-EVENRAY REFLECTION

ITAL TO INFRA-RED EFFICIENCY

Everywhere, finishing departments are cutting costs, speeding production, saving floor space, saving manhours by modernizing with Fostoria Infra-red ovens. No other method of heating is so amazingly fast, so easily controlled, so highly efficient. Like the sun, Infra-red lamps radiate electro-magnetic rays which create heat instantly *when directed upon any object.* Fostoria Golden Wall-Evenray reflection is the vital key which *directs, reflects and redirects* these Infra-red rays *uniformly* with the *highest productive utilization of energy.* Only Fostoria has it! The result is finer finishes, faster production and particularly lower "per unit" baking cost than with any other oven.



GOLD PLATED OVEN WALLS

Gold is by far the best reflector of Infra-red rays, 98% efficient. There is practically no energy loss through the gold plated Fostoria oven walls. Use of any other reflecting surfaces would absorb and waste from 15% to over 50% of all Infra-red rays. (See chart.) Obviously, the KW consumption per unit production is much less with a Fostoria oven.

EVENRAY REFLECTORS

Fostoria gold plated reflectors are scientifically designed to *direct and uniformly distribute* energy on the product being processed. This is vital. There are no hot spots. Whatever the critical temperature of the finish is, Fostoria ovens produce the temperature *evenly* over the whole product surface. Only Fostoria has it.

- **Highest productive utilization of energy — lowest energy loss**
- **Uniform heat distribution to all product surfaces**
- **Instantaneous heat, instantly controlled — no stand-by time — no overheating**
- **Lowest unit production cost and finest, most durable finishes**
- **Listed by Underwriters' Laboratories, Inc.**

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RESSED STEEL CORPORATION, Fostoria, Ohio

Oldest and Largest Manufacturers of Industrial Infra-red Ovens

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College Inn Porterhouse, Hotel Sherman. Features "A Steak for Every Purse."

Ray's Steak House, 112 E. Illinois (near Loop). They broil them to perfection here.

Sirloin Room, Stockyards Inn. Next door to the Amphitheatre. Select the steak of your choice at this outstanding restaurant.

St. Hubert's Old English Grill, 316 S. Federal St. (Loop). Choice English mutton chops a specialty; delicious steaks.

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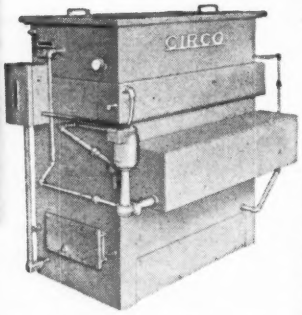
Cape Cod Room, Drake Hotel. It's one of the very best spots in town. Fresh Colorado brook trout flown in daily.

Ireland's 632 N. Clark St. Features anything you may wish in the sea food line.

Well of the Sea, Hotel Sherman. Prices above average but for sea food at its finest, this is it.

Mann's Rainbo Restaurant, 73 E. Lake St. (Loop). It if swims, they have it.

SAVE TIME MANPOWER with CIRCO VAPOR DEGREASERS



You can save *dollars* on your cleaning operations by installing CIRCO Vapor Degreaser in your production line. With its use metal parts cleaning is speeded up and made more efficient. Grease, oil and dirt are quickly and effectively removed from the parts by the vapors of the solvent. Chips, insoluble impurities, buffing compounds and stubborn dirt are completely removed with clean solvent flushing. Maintenance and operation costs are at a minimum. Solvent is distilled and reclaimed *automatically*.

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Use PER-SOLV or CIRCO-SOLV for all Vapor Degreasing requirements

CIRCO VAPOR DEGREASERS available in all types, vapor, vapor-immersion, vapor-spray and combinations. All sizes from small batch-type degreasers to custom-built monorail or cross-rod conveyor models.

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HOT Lacquer NEWS

PUBLISHED PERIODICALLY BY HERCULES POWDER COMPANY IN THE INTERESTS OF BETTER FINISHES AND FINISHING

Twin Coach Lacquers "Convertibles" for Army with One Hot-Sprayed Coat

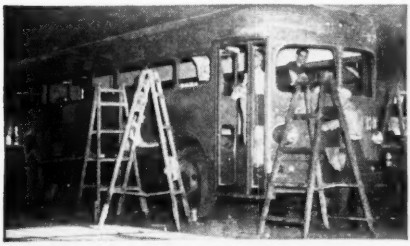
Kent, Ohio, Plant Avoids Thinning, Cuts Finishing Time and Costs

Motor coaches manufactured for the military, that can be converted from ordinary passenger vehicles to first aid or trucking use, have joined the growing list of military items now being finished with hot-spray lacquer. Here's why: only one coat needed, application time cut in half, finish is smoother, flow-out is better, blushing is eliminated, and solvents are saved.

Cellulose Products Department

HERCULES POWDER COMPANY
INCORPORATED
927 Market Street, Wilmington 99, Del.

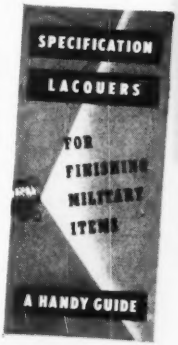
Hot spraying of Army coach convertible under way at Twin Coach Co. plant.



Bus bodies being made ready by cleaning, masking and priming before hot lacquer spraying.

Specification Lacquers for Finishing Military Items

Learn more about lacquer for defense finishing. Send for this handy guide to specification lacquers that helps you decide which finish you will need in performing government contracts. Specification numbers are listed, as well as an index to uses.



CL52-3

cook's tour

If you ask the lady of the house what makes her kitchen shine, she'll point out the appliances and furniture that sparkle with a chromium plated or polished aluminum or stainless steel finish. Chances are she doesn't know what plating is—but she knows that her mixer, toaster, range, refrigerator and kitchen utensils look better, work better and are easier to keep clean than anything in Grandmother's day.

Manufacturers of this equipment who are constantly striving to improve the quality and appearance of their products invariably turn to Hanson-Van Winkle-Munning for guidance as well as the processes, equipment and supplies for all plating, anodizing, pickling, polishing, and buffing operations.

And all industry looks to H-VW-M for the solution to any plating or anodizing problem—whether it's for Mrs. Housewife, or precision metal coatings for the fighting muscles of Uncle Sam, it all adds up to the same thing—H-VW-M *Platemanship.*

AND WHAT IS PLATEMANSHIP... *It is H-VW-M's unique combination of: the most modern and complete laboratory for testing and development ... the ability to provide complete equipment and supplies for every plating and polishing need ... the complete background of knowledge and experience in every aspect of plating, polishing, cleaning and anodizing.*

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Allegretti's Grill, 359 N. Wells St (Loop). Italian cooking you will like. Steaks and chops too, if you prefer.

Bit of Sweden, 1015 N. Rush St. Smorgasbord in a delightfully quiet atmosphere.

House of Eng., 106 E. Walton Place. Chinese food at prices that are right.

Jacques French Restaurant, 900 N. Michigan Ave. Right up there with the best of them.

Old Heidelberg, 14 West Randolph. Attractive dining room, classical music and fine German food.

Red Star Inn, 1528 N. Clark St. Tops for German cooking.

Riccardo's Studio Restaurant, 437 N. Rush St. Popular after-theatre spot for Italian food.

Shangri-La, 222 N. State St. One of the best Chinese spots. You'll see some of the most unusual and tempting food.

Sweden House, 157 E. Ohio St. Swedish dishes you are sure to like.

Swiss Chalet, Bismarck Hotel (Loop). Serves Swiss and German specialties.

Don, the Beachcomber, 101 E. Walton Place. Serves Cantonese food that's hard to beat.

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Kalamazoo TANK and SILO COMPANY

WOOD TANK DIVISION
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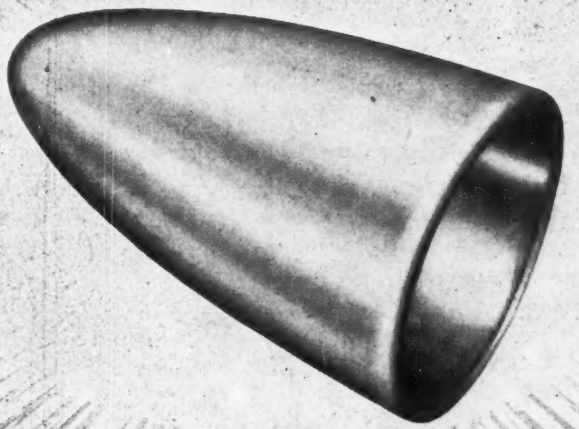
. . unharmed
by 250 hours of Salt Spray



Here is laboratory proof that dramatizes the stubborn protection given by a Randolph Finish.

This aluminum lighting fixture part—with one coating of Randolph Clear Baking S. G. Enamel Y-7300—was bombarded for 250 continuous hours in the Salt Spray (Fog) Chamber of a nationally-known testing company. Exposed to these severe moisture conditions, the part emerged without a flaw on its perfect surface.

Here is product-protection that never yields under the severest test! And that's not the whole story of Randolph quality. Randolph Finishes make your product look better, serve better and wear better—at lower costs!

We'll be glad to send you a free sample of Clear-Baking S. G. Finish Y-7300 if you write us. Any time you have finishing difficulties, call on our able technicians for help. They specialize in solving finishing problems.

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CARLSTADT, N. J.

Kungsholm, 100 E. Ontario (near Loop). Beautiful setting in a famous old mansion. Smorgasbord and Scandinavian foods you'll talk about.

L'Aiglon, 22 E. Ontario. Fine French restaurant where many Chicagoans like to dine.

Hoe Sai Gai, 75 West Randolph St. A lesson with chopsticks.

American Restaurants

Pump Room, Ambassador East Hotel. Swank spot where celebrities meet. Order a flaming sword dinner but first make reservations.

Camellia House, Drake Hotel. A beautiful spot to dine and dance.

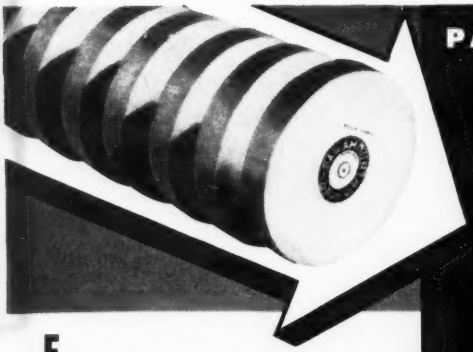
Charles Harrison Restaurant, One N. LaSalle St. One of the better Loop restaurants. You'll be pleased with the prices too.

Eitel's Field Building Restaurant, 130 S. Clark. Good for lunch and early dinner. In the Loop.

Isbell's, 940 N. Rush St. Chicken, ribs and charcoal steaks their specialty. Open every day until 3 a.m.

Wrigley Building Restaurant, 410 N. Michigan Avenue.

Blackhawk Restaurant, 139 N. Wabash (Loop). A popular dine and dance spot.



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FELT WHEELS ...TOPS IN Durability

Even the softest of Felt Wheels offers a durability difficult to match with any other of the commonly used fabric materials. Not only is felt tough and resistant to wear but when wear does occur, the wheel can be re-faced or re-contoured.

The net result of this durability is longer wheel life—longer *useful* wheel life. Try a Paramount Brand Felt Wheel of the proper hardness competitively. Check it against other wheels. We are confident it will show you greater earnings as measured by finished articles per wheel life.

BACON FELT COMPANY

Established 1825

447 West Water Street — Taunton, Massachusetts

"America's Oldest Felt Manufacturer" — "Felt Does It Better"

Your Supply House can Furnish Bacon PARAMOUNT BRAND FELT BOBS & WHEELS

Call in the company with the KNOW HOW
when you have metal surface treatment problems

You don't have to be knocked down by a car to learn not to take chances in traffic. And you shouldn't have to learn the hard way about surface treatments for metals, either!

Call on Parker!

Here you get the benefits of experience that has grown and matured in more than a third of a century, knowledge gained by working with thousands of manufacturers and their products, know-how developed by constant research, shirtsleeve experiment and observation.

For corrosion resistant paint base—for effective aid in cold forming of metals—for rust resistance—for wear resistance on friction surfaces—call on Parker. Get quality with proven dependability and economy.

Defense Production Problems? Parker Products meet applicable government specifications. Write for full information.

**Bonderite, Bonderlube, Parco, Parco Lubrite—Reg. U. S. Pat. Off.*

Since 1915 1st *in the field*

PARKER RUST PROOF COMPANY

2172 E. MILWAUKEE, DETROIT 11, MICHIGAN

BONDERITE —corrosion resistant paint base • **BONDERITE** and **BONDERLUBE**—aids in cold forming of metals • **PARCO COMPOUND**—rust resistant • **PARCO LUBRITE**—wear resistant for friction surfaces

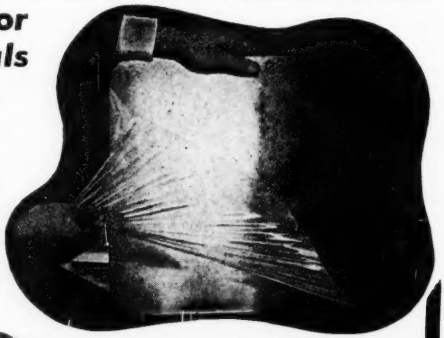
Buttery, Ambassador West Hotel, N. State and E. Goethe St. Fine atmosphere and fine food. Music, (Except Monday) starts at 9.

Ivanhoe, 3000 N. Clark St. Fine food, dancing and entertainment.

Shops

Baskin's	State and Adams
Best & Co.	20 S. Michigan
Bonwit Teller	830 N. Michigan
Carson, Pirie, Scott & Co.	State & Madison
Fair, The	S. State & W. Adams
Field, Marshall & Co.	111 N. State
Field's Men's Store	25 E. Washington
Goldblatt Bros. Inc.	333 S. State
Mandel Bros.	State & Madison
Peck & Peck	24 S. Michigan
Rothschild & Co., M. L.	304 S. State
Russeks	N. Michigan & E. Lake
Saks Fifth Ave.	669 N. Michigan

A Strippable Plastic for the Protection of Metals



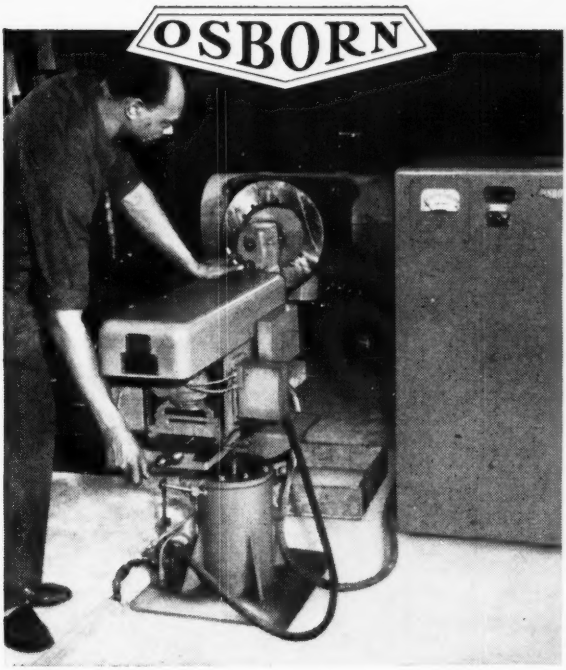
Striplastic is a protective plastic applied by spraying, dipping or rolling. It is used on stainless steels, high polished metal sheets, sheets in cold working or drawing, tools, dies and parts, and on sheets or metal parts before packaging. It protects against scratching and abrasion, and against rust. Also available as a booth coat protection.

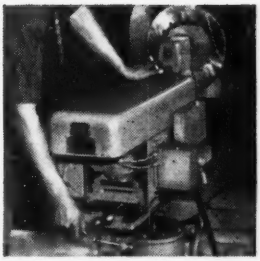
THE

STRIPLASTIC

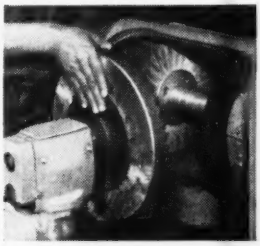
Among many advantages, it is non-toxic, possesses great tensile strength and is easily stripped off in one piece. Write for complete information on this new strippable plastic.

COMPANY
10828 QUEBEC AVE.
CLEVELAND 6, OHIO





SET-UP IS SIMPLE. The machine is versatile. If your production involves small runs of many different types and sizes of gears and similar parts, you can specify machine settings for each part and operator can make set-up changes easily and quickly for maximum daily output. The complete brushing cycle is controlled automatically by the electronic timer which is set for any desired brushing interval to suit the size, shape or condition of part being brushed.



OPERATION IS SPEEDY. The operator mounts the gear easily and quickly. The gear advances to the face of two rotating Osborn brushes and the edge of the gear teeth makes contact with the brushes. To assure fast, positive action on each piece brushed, an automatic control reverses the direction of brush rotation on every cycle of operation.

Deburrs gears 15 times faster at the push of a button!

Want to break a big bottleneck in the production of gears and similar parts? Manufacturers are doing just that with the Osborn Work Holder Brushing Lathe.

In the plant of the White Motor Company, Truck Division, Cleveland, Ohio, this Osborn machine deburrs and finishes gear teeth 1570% faster than the old method. This was done formerly with a portable grinder . . . a tedious operation that took 25 minutes for the 14-inch hypoid gears shown. Now, an operator simply places the gear in the Osborn Work Holder Brushing Lathe, pushes a button and the machine does the job automatically. Floor-to-floor time is only 1½ minutes! Uniformity of finish results in additional time savings in matching and assembly of gears.

It will pay you to investigate this high-speed, high-quality machine for deburring and finishing gears on a production basis. Call your **O**sborn **B**rushing **A**nalyst today or write *The Osborn Manufacturing Company, Dept. 738, 5401 Hamilton Avenue, Cleveland 14, Ohio.*

RESULTS ARE UNIFORM. Burrs and sharp edges are removed uniformly. Every gear tooth has smooth, uniform rounded edges. Surfaces are blended.

Osborn Brushes

OSBORN POWER, MAINTENANCE AND PAINT BRUSHES AND FOUNDRY MOLDING MACHINES

INVESTIGATE IT TODAY

for *your* problems. Users report time savings ranging from 20% to 1570% with the Osborn Work Holder Brushing Lathe. Let us demonstrate what it can do for you!

A. E. S.
INDUSTRIAL FINISHING EXPOSITION JUNE 16-19

THE outstanding attraction of the American Electroplaters' Society's 39th Annual Convention is the Third Industrial Finishing Exposition which will be held at the International Amphitheatre, 43rd and Halsted Streets, Chicago. Here more than 100 organizations have contracted over 200 booth spaces to show the greatest array of industrial finishing services and products ever displayed under one roof.

In this, the Third Exposition in the post-war era, manufacturers and suppliers to the metal finishing industry will be exhibiting the latest developments in equipment, processes, materials and services. The show takes on a new appeal this year since manufacturers of paint, lacquer, enamels, ovens, and spray equipment have been invited to exhibit for the first time.

The exposition committees and the exhibitors have just reason to be proud of their show, for, to date they have far exceeded all expectations in the excellent quality of their exhibits. In addition, the various branches of the Society have responded beautifully. Their exhibits are truly educational.

On the following pages appears a complete list of exhibitors with the booth number of each display and a floor plan of the exposition. Descriptions of products and processes may be found on pages 128-148.

The Third Industrial Finishing Exposition is a "must" for A.E.S. members, platers, shop superintendents, finishing technicians, process engineers and executives, who here have a chance to see, investigate, and discuss the latest developments in the entire metal finishing industry. The Exposition will be open to visitors from 12:00 noon, Monday, June 16, to 5 P.M., Thursday, June 19, according to the following schedule:

Date	*Open*	*Close*
Monday, June 16	12 Noon	8:00 P.M.
Tuesday, June 17	9:00 A.M.	5:00 P.M.
Wednesday, June 18	12 Noon	10:00 P.M.
Thursday, June 19	9:00 A.M.	5:00 P.M.

Admission to the Exposition is by trade tickets furnished to exhibitors for distribution to customers and prospects. The public will be admitted only by obtaining tickets at booths and by registering.

TIME SPENT WITH EXHIBITORS IS WELL SPENT

"Let's Get Acquainted"

You're Invited to Visit the MUNNING Exhibit
Booth 6 — Aisle R
Industrial Finishing Exposition — June 16-20, Chicago.

Send for the Latest Catalog THE MUNNING LINE

Meet your every need for:

ANODIZING
DESCALING
ELECTRO PLATING
DEBURRING
TUMBLING
MIXING
BUFFING
POLISHING
PICKLING
METAL CLEANING
DEGREASING
SALT SPRAY TESTING
FILTERING
METAL COLORING
OTHER SPECIALIZED OPERATIONS

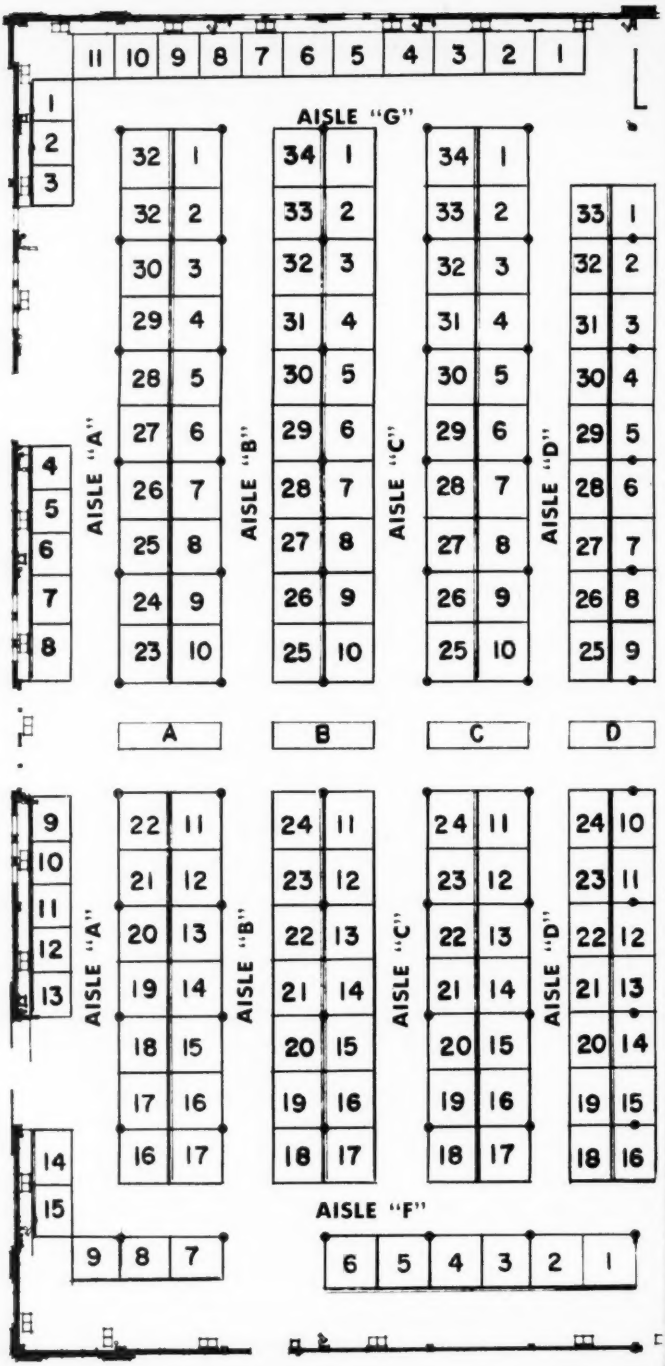
MUNNING & MUNNING, INC.

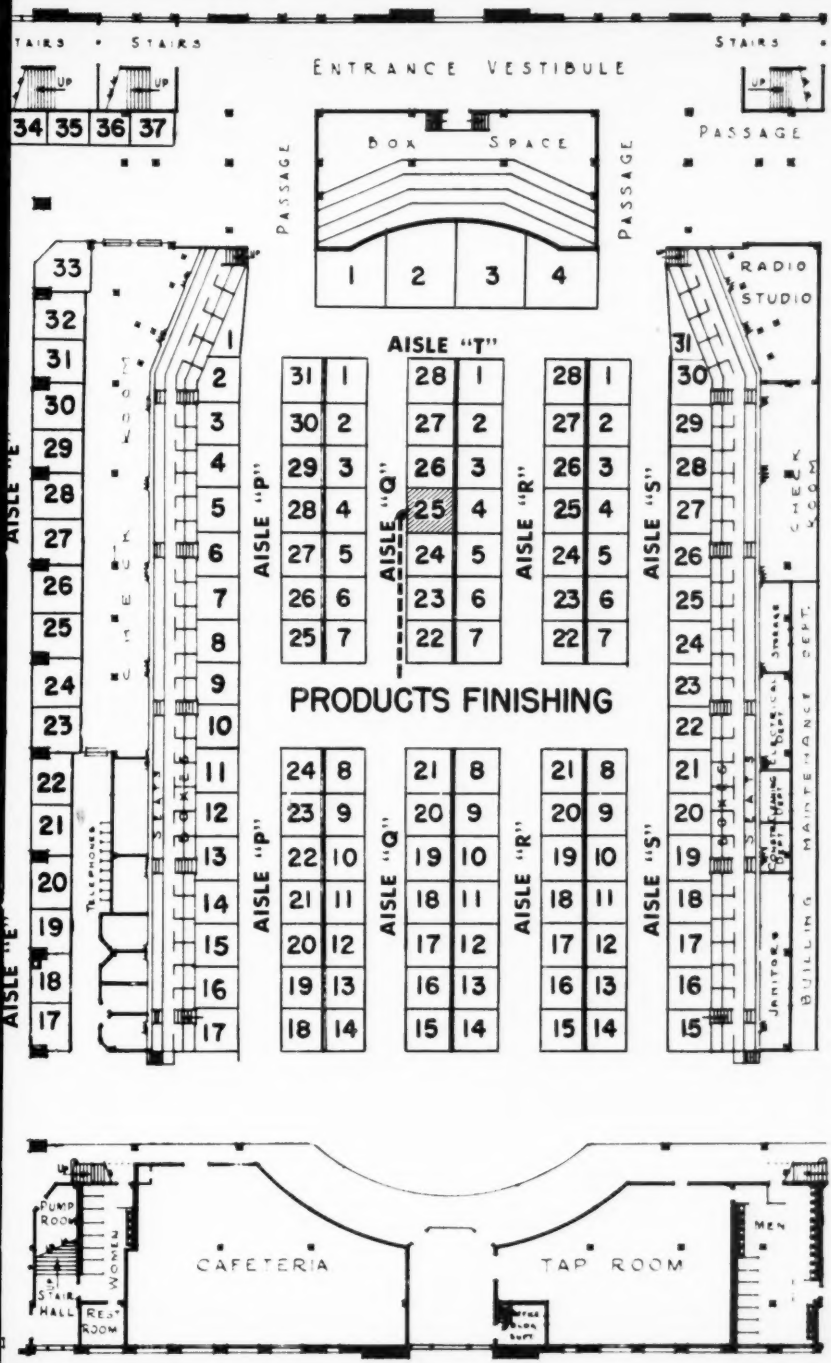
Manufacturers of Dependable Equipment & Supplies for Progressive Metal Finishers
202-208 EMMETT STREET, NEWARK 5, NEW JERSEY
BRANCHES: Woolworth Building, New York City • Bourse Building, Philadelphia 190 Wyndham Avenue, Providence, R. I.

ON this and the opposite page are shown the floor plan of the Chicago International Amphitheatre, where, from June 16 thru June 19, the 1952 A. E. S. Industrial Finishing Exposition will be held.

Branch exhibits of the American Electroplaters' Society will be in booths Nos. A 9-22; exhibits of the American Electroplaters' Society Research Program will be in booths Nos. F 4-6; exhibits of the Chicago Electro-Platers Institute will be in booths Nos. A 1-6 and G 9-11.

Booth numbers in list of exhibits, pages 76 to 83 inclusive, refer to numbers on floor plans.




STAIRS
STAIRS
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ENTRANCE VESTIBULE
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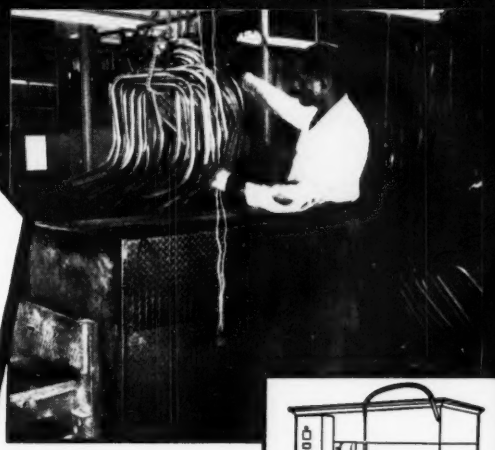
UP
UP
34 35 36 37
PASSAGE
BOX SPACE
PASSAGE
PASSAGE
1 2 3 4
RADIO STUDIO
AISLE "T"
AISLE "E"
AISLE "P"
AISLE "Q"
AISLE "R"
AISLE "S"
CHECK ROOM
LITERATURE ROOM
STAFF
TELEPHONES
PRODUCTS FINISHING
BUILDING MAINTENANCE DEPT.
JANITORS
PUMP ROOM
STAIR HALL
WOMEN
REST ROOM
CAFETERIA
TAP ROOM
MEN

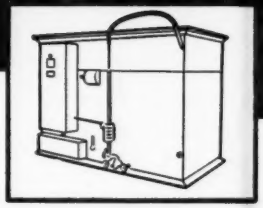
List of Exhibitors

Firm	Booth No.
Acme Mfg. Company, Ferndale Michigan	D 11-12-13
Admiral Engineering Corp., Chicago, Illinois	A 7
Agri-Indus Mfg. Company, Columbus, Ohio	G 7
Allied Research Products Inc., Baltimore, Maryland	S 19-20
Almco Div., Queen Stove Wks., Albert Lea, Minnesota	E 15-16
American Buff Corp., Chicago, Illinois	Q 15-16-17
American Electroplaters' Society Research Program	F 4-5-6
Americana Corporation, Chicago, Illinois	P 13
Ashdee Products, Homewood, Illinois	S 2-3-4
Automotive Rubber Company, Detroit, Michigan	C 9-10
Bart-Messing Corporation, Brooklyn, New York	S 30-31
Beacon Supply Company, Chelsea, Massachusetts	E 2
Belke Mfg. Company, Chicago, Illinois	R 15-16-17-18
G. S. Blakeslee & Company, Chicago, Illinois	S 17-18
Wesley Block Company (Richardson Allen), Long Is., N. Y.	E 32-33
W. H. Brady Company, Milwaukee, Wisconsin	E 34
Branch Exhibits-American Electroplaters' Society	A 9-10-11-12-13-14-15
Branch Exhibits-American Electroplaters' Society	16-17-18-19-20-21-22
The Buckeye Products Company, Cincinnati, Ohio	R 7
The Buckingham Products Co., Detroit, Michigan	G 1-2
The Chemical Corporation, Springfield, Massachusetts	R 14
Chicago Electro-Platers Institute, Chicago, Illinois	A 1-2-3-4-5-6
Chicago Electro-Platers Institute, Chicago, Illinois	G 9-10-11
Chicago Thrift-Etching Corp., Chicago, Illinois	S 21-22
Commercial Filters Corp., Boston, Massachusetts	D 10
Conforming Matrix Corp., Toledo, Ohio	S 11-12
Creative Development & Mfg. Co., Dayton, Ohio	C 23
Crown Rheostat & Supply Company, Chicago, Illinois	R 2-3-4-5
Detrex Corporation, Detroit, Michigan	S 1
Detroit Chemical Specialties, Detroit, Michigan	E 23-24
Diamond Alkali Company, Cleveland, Ohio	Q 28
Distillation Products, Rochester, New York	E 14
The Diversey Corporation, Chicago, Illinois	Q 22-23-24
Dow Chemical Company, Midland, Michigan	E 13
Duggan Masking Devices, Detroit, Michigan	unassigned
Du-Lite Chemical Corp., Middletown, Connecticut	E 25
E.I. DuPont de Nemours & Co., Wilmington, Delaware	C 3-4

ENGINEERED
SERVICE



Before
PLATING
RUST-PROOFING
PAINTING



Use PHILLIPS
VAPOR DEGREASING
for Easier, Faster, More Economical Metal Cleaning

NO MATTER what your finishing operations are, you must be sure of perfectly clean surfaces for the best results. Built to operate at the high vapor temperature of 250.2°F, Phillips degreasers assure 30% more cleaning action because more solvent contacts the metal. Industrial processing compounds with relatively high flow points dissolve rapidly and are completely removed in Phillsolv vapor. Automatic thermostat control makes Phillips degreasers reach peak efficiency faster, consume power only when needed, and eliminate waste consumption. Phillips units operate with extra economy, have the greatest cleaning power, and assure chemically clean metal surfaces. Complete line of standard and special models meet all requirements. Check with Phillips today on your metal cleaning problems.

Send for Your Free Copy of New Illustrated Degreaser Bulletin

See Phillips in Booth C-1 at Industrial Finishing Exposition, June 16-19, International Amphitheatre, Chicago.

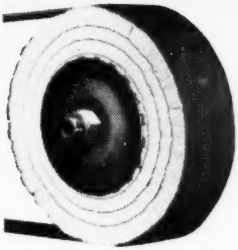
Phillips

3457 TOUHY AVENUE • CHICAGO 45, ILLINOIS
MANUFACTURING COMPANY
ENGINEERED METAL CLEANING EQUIPMENT

LIST OF EXHIBITORS—*Continued*

Firm	Booth No.
Electric Products Company, Cleveland, Ohio	P 9-10
Electrofilm Corporation, North Hollywood, California	E 21
Electronic Rectifiers, Inc., Indianapolis, Indiana	Special Island "A"
Enthone, Incorporated, New Haven, Connecticut	P 7-8
Finishing Publications, Westwood, New Jersey	Q 18
Formax Mfg. Company, Detroit, Michigan	D 23-24
Gasway Corporation, Chicago, Illinois	G 3
General Chemical Div., Allied Chem. & Dye Corp., New York, N. Y.	E 3
Globe Chemical Company, Cincinnati, Ohio	E 17
Grav-I-Flo Corporation, Sturgis, Michigan	F 7
Green Electric Company, Inc., New York, New York	R 1
Hanson-Van Winkle-Munning Co., Matawan, New Jersey	P 18-19-20-21
Hanson-Van Winkle-Munning Co., Matawan, New Jersey	Q 11-12-13-14
Hammond Machinery Builders, Inc., Kalamazoo, Michigan	B 23-24 & C 11-12
Harshaw Chemical Company, Cleveland, Ohio	E 10-11
H. N. Hartwell & Son, Boston, Massachusetts	F 9
Haveg Corporation, Newark, Delaware	S 24
Jacob Hay Company, Chicago, Illinois	E 12
Heatbath Corporation, Springfield, Massachusetts	C 25
Heil Process Equipment Corp., Cleveland, Ohio	S 15-16
R. O. Hull & Company, Inc., Cleveland, Ohio	P 5-6
Illinois Water Treatment Co., Rockford, Illinois	E 26
Industrial Electroplating Co., Indianapolis, Indiana	D 32-33
Industrial Filter & Pump Mfg. Co., Chicago, Illinois	R 11-12-13
Imperial Plating Rack Co., Flint, Michigan	S 13-14
International Nickel Company, New York, New York	P 23-24
Kocour Company, Chicago, Illinois	Q 26
Kraft Chemical Company, Chicago, Illinois	S 5-6
Lasalco, Incorporated, St. Louis, Missouri	R 9-10
The Lea Mfg. Company, Waterbury, Connecticut	R 20-21
Lewis Electrical Mfg. Company, New York, New York	Q 21
Charles F. L'Hommedieu & Sons, Chicago, Illinois	C 18-19-20-21
MacDermid, Incorporated, Waterbury, Connecticut	R 27-28
Matchless Metal Polish Co., Chicago, Illinois	Q 19-20
The McGean Chemical Company, Cleveland, Ohio	B 11-12
Metal & Thermit Corp., New York, New York	D 15-16
Michigan Buff Company, Inc., Detroit, Michigan	E 22
Frank Miller & Sons, Chicago, Illinois	E 35
J. C. Miller Company, Grand Rapids, Michigan	P 14-15

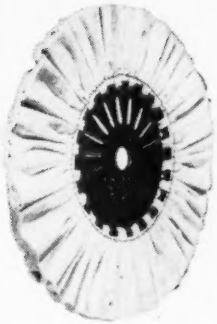
A FEW OF THE MANY FORMAX PRODUCTS



STYLE C-20 CONTACT WHEELS

and F-26 Belt Lubricant

A C-20 flexible Contact Wheel will form itself to the shape of the work and permit the abrasive felt to polish contoured surfaces and F-26 Abrasive Belt Lubricant will increase belt life by preventing loading and glazing. Produces finer, smoother and brighter surfaces through lubrication.



ZIPPO BUFFS

These famous long-wearing buffs run cool under all buffing conditions. Constructed of high count bias-cut cloth or sisal mounted on safe steel centers. Available in a wide range of densities and center diameters.

A complete line of buffing compounds in bar form as well as in liquid form for brush or spray application. Also Flex-A-Glu polishing wheel cements.

Our Laboratory and Sales Engineering staff would welcome the opportunity to be of help in solving your finishing problems.

Send for descriptive literature

FORMAX MFG. CORP.

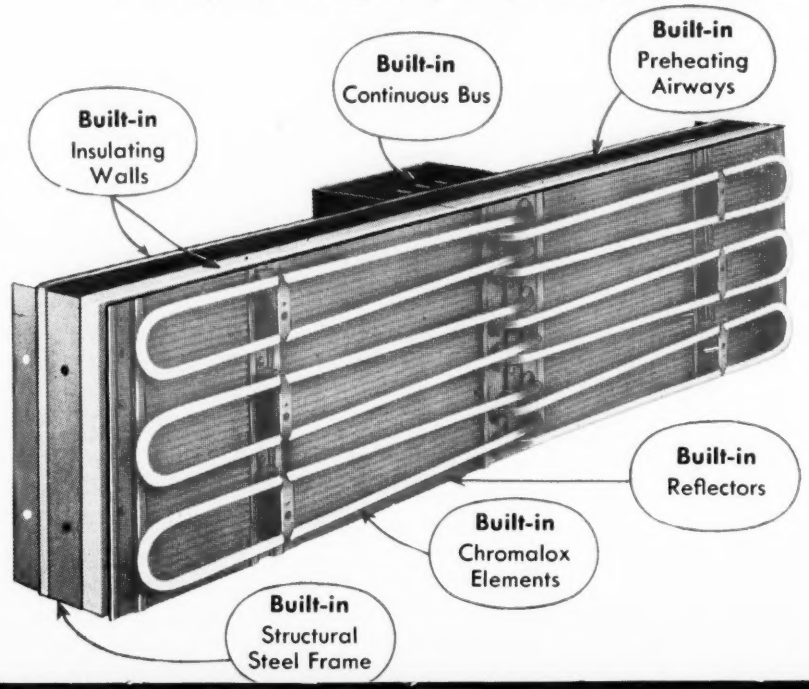
DETROIT 7, MICHIGAN

"THE FOUR McALEERS"

MANUFACTURED IN CANADA BY JOHN GALLOWAY LTD., KITCHENER, ONT.

Announcing

a **new** and **better** *INFRARED* Generator



CHROMALOX

FAR-INFRARED

For Baking, Drying, Curing, Dehydrating

and many other applications.

9 WAYS BETTER

1. **Longer wave length**—absorbed equally fast by all colors.
2. **Shatter-proof construction**—nothing to break and contaminate.
3. **Non-diminishing output** from all-metal Chromalox tubular heat generators.
4. **Uniform heat**—no hot or cold spots.
5. **High intensity radiation**—with more watts per square foot.
6. **Quick heat-up** with energy transformed instantly into heat on the work.
7. **Low-cost oven assembly.**
8. **Infinitely variable output**—from 0 to 100% of capacity.
9. **Additionally safe** for any work involving volatiles.

CHROMALOX *Electric* RADIANT PANELS

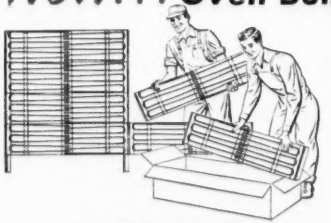
Now, more efficient *far*-infrared comes in convenient pre-engineered panels, reducing oven building to a matter of determining heat requirements and assembling panels to fit the job.

CHROMALOX Electric Radiant Panels generate more uniformly absorbed *far*-infrared heat with quick heat-up and reduced oven lengths.

It's the *far*-infrared wave length that makes the difference.

- ✓ **9200 Btu's per square foot output per hour.**
- ✓ **Insulated for voltages to 575 V.**
- ✓ **Lowest installed cost per kilowatt and per square foot.**
- ✓ **Work temperatures to 700° F. easily obtained.**
- ✓ **Accurate "dialed" control.**
- ✓ **Absolutely uniform radiation—no hot or cold spots.**
- ✓ **Built to UL and NBFU requirements.**

Now. . . Oven Building as Simple as

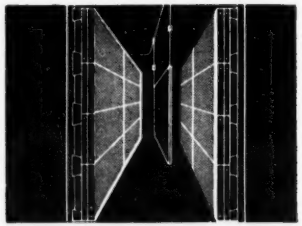


It's easy to build ovens of any desired height and length with lightweight Chromalox Electric Radiant Panels. Panels come in 1 x 4 ft. and 2 x 4 ft. sizes, ready to erect and connect with easy-to-follow instructions in each carton. Chromalox on-the-spot engineering assistance to help determine your requirements is yours—no obligation, of course.

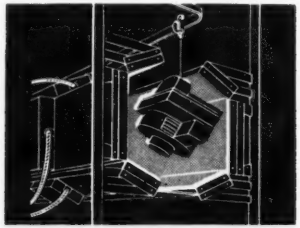
CHROMALOX *Electric Heat*

Does More - Better - Consistently

Radiant Heating Division EDWIN L. WIEGAND CO.,
7552 THOMAS BLVD., PITTSBURGH 8, PA.



Easily erected banks of Chromalox Radiant Panels are ideal for line production. *Far*-infrared heat is radiated directly and uniformly without hot spots over entire work area.



Chromalox Radiant Panels can be erected into any oven shape. Rugged construction permits their use in assembly lines, even when hazards of splashed liquids, volatiles and moisture are present.

Get this Bulletin

It contains complete information, specifications and application ideas for the use of Chromalox Radiant Panels. Write for your copy today.

IC-66

LIST OF EXHIBITORS—*Continued*

Firm	Booth No.
Minnesota Mining & Mfg. Co., St. Paul, Minnesota	P 22
Mitchell-Bradford Chemical Co., Stratford, Connecticut	C 24
Munning & Munning Inc., Newark, New Jersey	R 6
Nelson Chemical Corp., Gripmaster Div., Detroit, Michigan	R 22-23
Nobles Engineering & Mfg. Co., St. Paul, Minnesota	P 12
Oakite Products, Inc., New York, New York	P 16-17
Paasche Airbrush Company, Chicago, Illinois	E 19-20
Parker Rust Proof Company, Detroit, Michigan	F 1-2
Perma-Line Rubber Company, Chicago, Illinois	D 17
Phillips Mfg. Company, Chicago, Illinois	C 1
Plating Magazine, Newark, New Jersey	P 11
Precision Metal Molding Magazine, Cleveland, Ohio	C 17
Production Machine Company, Greenfield, Massachusetts	S 7
Products Finishing, Cincinnati, Ohio	Q 25
Promat Division—Poor & Co., Waukegan, Illinois	Special Island "C"
Ransburg Electro-Coating Corporation, Indianapolis, Indiana	C 32-33-34
Ransburg Electric-Coating Corporation, Indianapolis, Indiana	D 1-2-3
Rapid Electric Company, Bronx, New York	E 8-9
Rampe Mfg. Company, Cleveland, Ohio	E 20
Rinshed-Mason Company, Detroit, Michigan	G 5
Roto-Finish Company, Kalamazoo, Michigan	P 3-4
Sarco Company, Inc., New York, New York	P 2
The Schaffner Mfg. Company, Pittsburgh, Pennsylvania	S 8-9
J. J. Siefen Company, Detroit, Michigan	G 4
Solventol Chemical Products Inc., Detroit, Michigan	S 23
South Florida Test Service, Miami, Florida	S 25
Sparkler Mfg. Company, Mundelein, Illinois	R 8

TIME SPENT WITH EXHIBITORS IS WELL SPENT

Yes: WE'D LIKE TO GET A COPY OF THE BIG NEW **M & E** SPRAY FINISHING EQUIPMENT GUIDEBOOK

SPRAY BOOTHS - Systems

Name_____

Title_____ Street_____

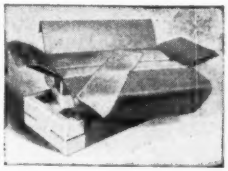
Company_____ City_____ State_____

M&E MANUFACTURING COMPANY
PAINT SPRAY FINISHING SYSTEMS
INDIANAPOLIS 5, INDIANA

LIST OF EXHIBITORS—*Continued*

Firm	Booth No.
The Standard Electric Tool Co., Cincinnati, Ohio	D 18
Standard Plating Rack Co., Chicago, Illinois	Q 27
Frederic B. Stevens, Inc., Detroit, Michigan	P 25-26-27-28-29-30-31
Frederic B. Stevens, Inc., Detroit, Michigan	Q 1-2-3-4-5-6-7
George A. Stutz Mfg. Co., Chicago, Illinois	Q 8-9-10
Sulphur Products Company, Greensburg, Pennsylvania	P 1
Titeflex, Incorporated, Newark, New Jersey	R 26
Topper Equipment Company, Matawan, New Jersey	D 25
H. D. Trerice Company, Detroit, Michigan	S 10
Turco Products, Inc., Los Angeles, California	S 26
The Udylite Corporation, Detroit, Michigan	T 1-2-3-4
United Chromium, Inc., Detroit, Michigan	S 27-28-29
U. S. Dept. of Commerce, Chicago, Illinois	C 2
Van Dorn Iron Works, Cleveland, Ohio	E 31
Wagner Brothers, Detroit, Michigan	R 24-25
Wallace & Tiernan Company, Inc., Belleville, New Jersey	E 1
Edwin L. Wiegand Company, Pittsburgh, Pennsylvania	Special Island "D"
Wyandotte Chemicals Corp., Wyandotte, Michigan	R 19

IN ROLLS
Cut off any size piece and use as needed.



CUT BULK
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Now you can get Tack Cloth packed the way it's easiest for you to use—either in 150 yard rolls of 36" wide cloth or in handy cartons—100 or more Tack Cloths to the carton.

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. . . at Philip Carey Mfg. Co.
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These specially designed three-temperature zone ovens bake the batts, setting the binder solution, and are individually adjustable for batts of varying thickness and density. Closed circuit cooling tunnels, handling 50,000 CFM of air each, completely cool the batts before packaging.

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KIRK AND BLUM
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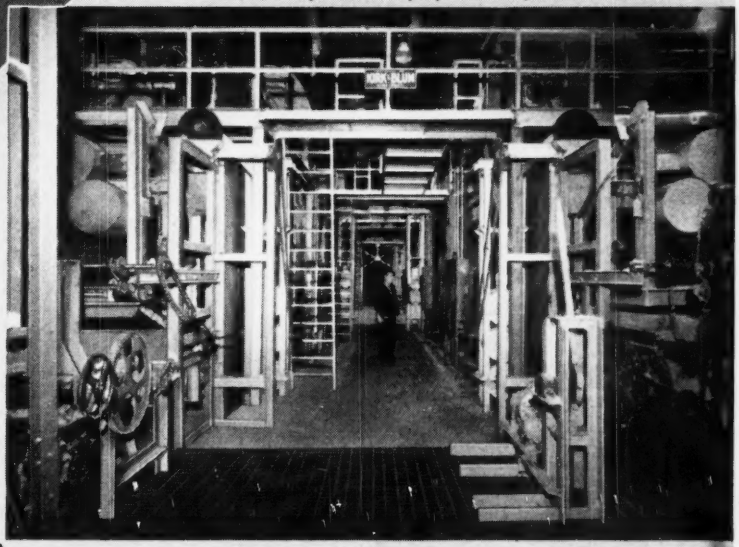
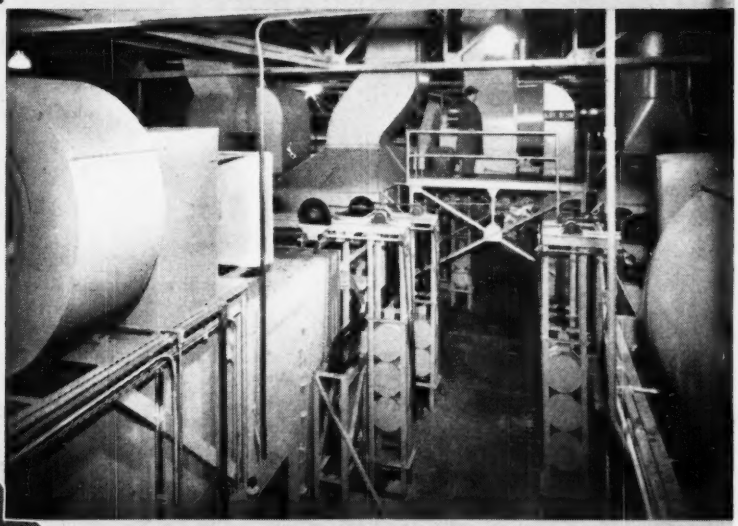
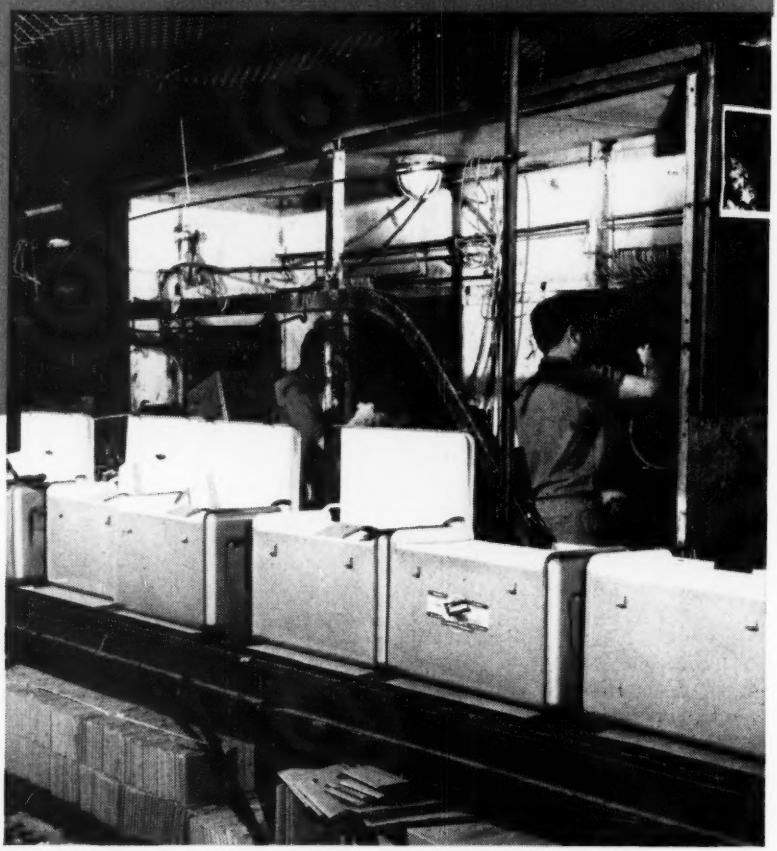
Dual Rock Wool Processing Lines; Ovens in left background and cooling tunnels at right. In left foreground is rock wool granule reclamation; particles are collected and bagged.

Rock Wool Batt Production; fibres are formed into batts, compressed to proper density and baked.





Air Heating and Handling Equipment; ovens are gas-heated, atmospheric air used for cooling.



• Poloron's Thermaster Portable Refrigerators pass through spray painting booths where they are sprayed with Pittsburgh's Hammerhide Finishes on the exterior. Interiors are finished with gleaming, blue-white baked enamel. Poloron also produces a Woodland model which has Pittsburgh Wrinkle Finish on the exterior.

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● **Poloron's** Thermaster Portable Refrigerators are sprayed with Pittsburgh Hammerhide Finishes. Interiors are finished with gleaming, blue-white baked enamel. Its Woodland model has Pittsburgh Wrinkle Finish on the exterior.

● **Poloron** also produces Woodland feather-weight vacuum jugs in one- and two-gallon sizes, as well as one-gallon Thermaster bottles. The Woodland jugs are sprayed with Pittsburgh's Green Polychromatic Enamel and the Thermaster bottles are coated with Gray Hammerhide Finish.

PITTSBURGH PLATE GLASS CO., Industrial Paint Div., Pittsburgh, Pa. Factories: Milwaukee, Wis.; Newark, N. J.; Springdale, Pa.; Atlanta, Ga.; Houston, Texas; Los Angeles, Calif.; Portland, Ore. Ditzler Color Div., Detroit, Michigan. The Thresher Paint & Varnish Co., Dayton, Ohio. Forbes Finishes Division, Cleveland, Ohio. M. B. Suydam Div., Pittsburgh, Pa.

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Poloron Products, Inc., is just one of the many manufacturers with whom Pittsburgh's technical staff has worked to develop highly specialized finishes. This broad experience may be helpful in saving you time and money. Write, wire or phone the Pittsburgh Paint plant nearest you. We'll be glad to have one of our engineers discuss your finishing problems with you at no cost or obligation.

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Bicycle Finishing

While much of Japan's finishing industry has not been able to adopt what we regard as modern finishing practices, still some plants have been quick to evaluate and utilize those modern systems that are beneficial. The plant whose finishing operations are described in this article employs a Ransburg electrostatic paint spray unit, and uses a surface conversion dip to produce bright zinc plate.

By EZRA A. BLOUNT
Editor

PF FEATURE

The economy, geography, and transportation system of Japan, like that of Europe and many Asiatic countries, combine to make the manufacture of bicycles, for commerce or pleasure, a major industry. One of Japan's leading cycle producers, Miyata Works, Ltd., operates three plants to produce parts and completed bicycles and motorcycles. Manufacturing and finishing operations in the Tokyo plant are described in this article.

The Miyata Works, Ltd., was established in Tokyo about 1890, at a time when the bicycle industry in England was in a high state of development. Through enterprise and natural growth, resulting from public acceptance of its high quality bicycles, the company progressed and expanded until today its 900 employees produce 15,000 bicycles per month. Since 1947 over 100,000 bicycles have been exported, an illustration of the rapidity with which one element of Japanese industry has established, to a degree, normal production and international trade.

Typical of Japanese manufacturing plants (and not too different from U. S. factories) is the Kamata, Tokyo plant of Miyata Works. The plant consists of four hip-roof, one-story buildings with high ceilings or roofs and typical concrete and steel construction. There is

in JAPAN

also a four-story building for offices and laboratories. All these buildings are located in a fenced-in "compound," containing also a landscaped court and parking area.

Frame Fabrication

All parts of the bicycle are fabricated and finished in the various plants, except the tires, rims, spokes and chains; these are purchased ready to assemble. The usual machining operations, as well as forging, welding, and forming are employed, with the various departments so located that production moves smoothly, aided by conveyors where possible. Of particular interest are the various assembly-welding operations used to fabricate a bicycle frame and front fork, and the roll-forming of mud guards. Figure 1 shows one of the several flash butt welding operations. A frame member is clamped in a jig and forced against the part to which it is to be welded by 85-100 p.s.i. pressure, and at the same time a strong current supplied from a 200 K.V.A. transformer heats the junction and forms the weld. Such operations are progressive, and welders are located in a large U-shaped area, around which an over-

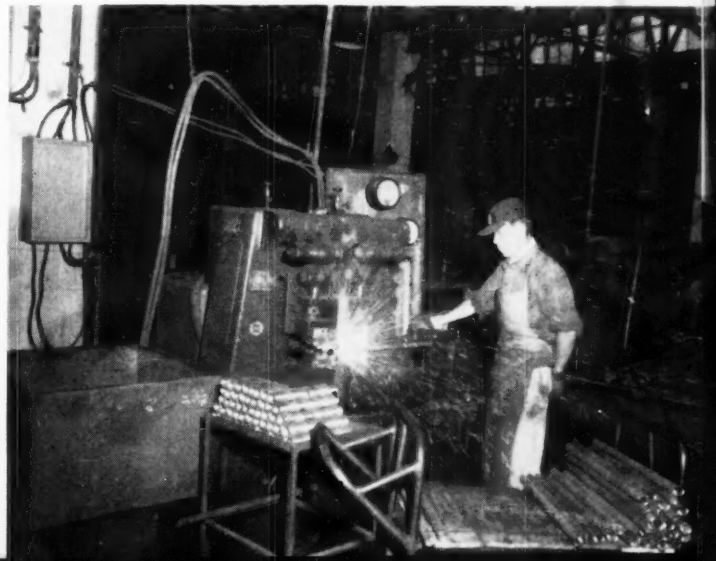


Fig. 1 — A flash-butt welder is used to join two elements of a main bicycle frame.

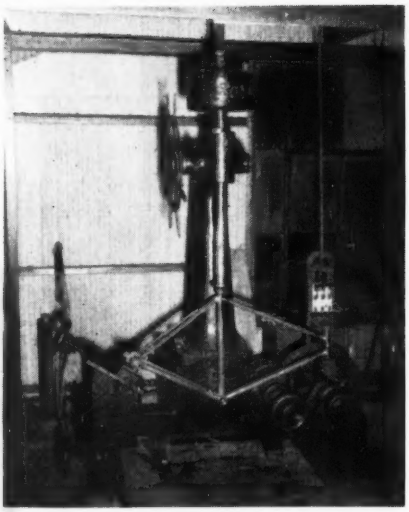


Fig. 2—This machine tests bicycle frame welds severely.

head chain conveyor travels (at 2½ ft./min.) to transport parts from one station to another. Welded joints on the completed frames are smoothed by filing before the frames are tested and delivered to the finishing department.

One completed frame from each lot of 100 is tested for soundness of the welds in the testing machine shown in Fig. 2. The frame is mounted on the test jig through the rear axle housing, and a 300-pound load is lowered on the portion of the frame where the bicycle seat will be attached. Then a cam arrangement raises the front part 1 inch high and lets it drop at the rate of 250 drops per minute. This test is continued for an hour. Company officials report that no frame has ever failed in this test.

Paint Finishing

Bicycle frames and front forks are transported to the phosphatizing and painting departments, located in a building immediately adjacent to the fabrication plant. Preparation for finishing involves the following process operations:

1. Pickle for 30 minutes in a warm (104 deg. F.) 5-10 per cent solution of sulfuric acid containing a wetting agent and inhibitor. This

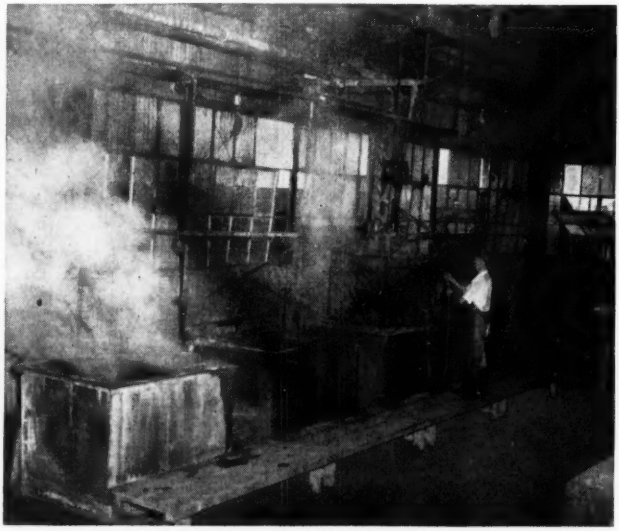


Fig. 3—A view of the Parkerizing tanks at Miyata Works. Steel tanks with hinged covers are employed for the solutions. Baskets of bicycle parts are transported from tank to tank by means of a tramrail conveyor and chain hoist.

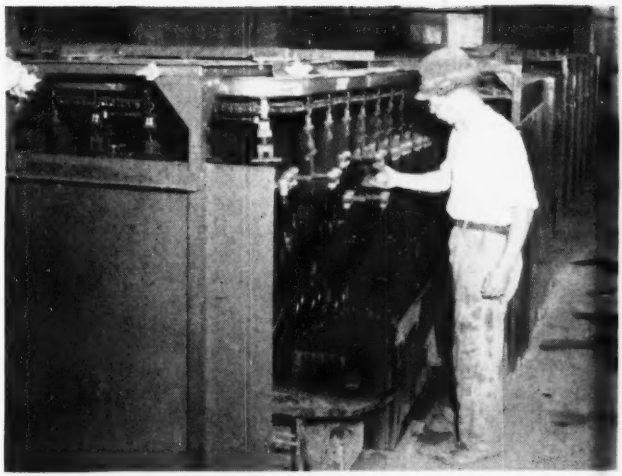


Fig. 4 — A rack of front forks is dipped in black enamel and hung on the draining and baking conveyor.

treatment is employed in lead lined, wood tanks installed under a ventilating hood.

2. Rinse thoroughly.
3. Alkali clean in boiling 10 per cent caustic soda.
4. Rack in frames and Parkerize for 40 minutes (see Fig. 3).
5. Rinse in hot water.

Parkerized parts are sanded lightly and rubbed with Tonoko primer putty (wet putty glazing), after which they are dried in an oven at 300 deg. F. Front forks, (loaded 4 per hook) are dipped successively in three coats of black baking enamel and baked in the efficient, compact conveyorized dipping and infra-red baking unit, shown in Fig. 4, located adjacent to the preparation room. The unit consists of a dipping zone, baking zone, and cooling zone, and is so timed that it may be run continuously. The 50-foot-long conveyor makes a complete revolution every 46.6 minutes; baking is accomplished during the 15 minutes that the forks pass through the infra-red oven.

Bicycle main frames receive the same wet glazing and baking treatment previously described. They are then hung, two per hook, on an overhead chain conveyor that carries them through a two-unit Ransburg electrostatic spray painting and infra-red

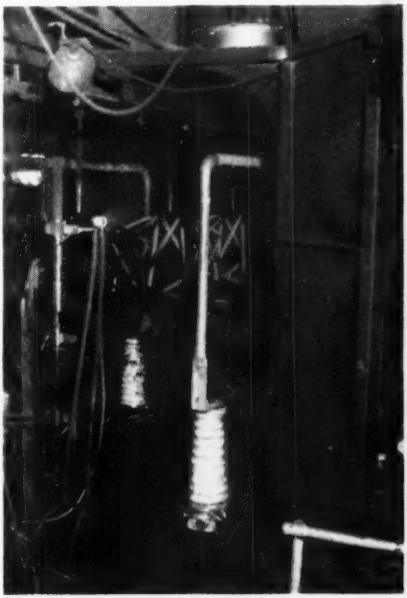


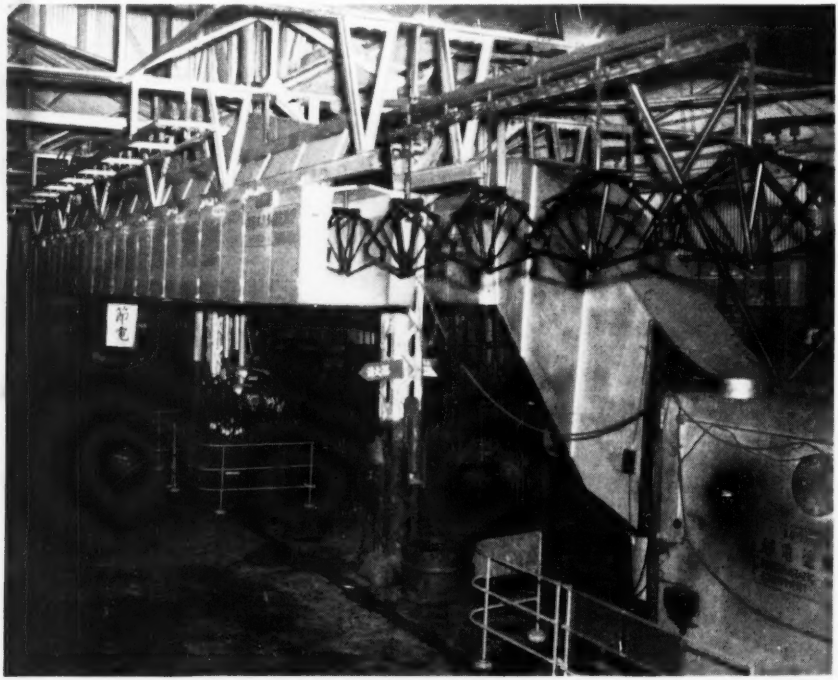
Fig. 5—A conveyor carries main frames between the electrodes of a Ransburg electrostatic paint spray booth.

baking setup. Figure 5 is a close-up view of the electrostatic spray booth in which the first coat of Berry Bros. black enamel is applied. Three Binks spray guns, oscillating vertically, coat the frames, after which the conveyor carries them up to ceiling height in a short, enclosed "setting-up" area, and into an infra-red oven. Figure 6 is a view of the baking ovens. The 30-foot-long overhead infra-red oven bakes the enamel in 15 minutes at a temperature of about 325 deg. F. Power required is 80 k.w. Oven capacity is 120 frames per hour.

Frames on which the first coat has been sprayed and baked are shown in the right foreground of Fig. 6 as they emerge from the infra-red oven. The conveyor then drops down to floor level and transports the frames through another electrostatic spray booth in which the second black enamel coat is applied with four Binks No. 21 spray guns. The painted frames then pass through the "set-up" tunnel, shown in the right foreground of Fig. 6, and through a second infra-red baking oven, after which they are removed from the conveyor so that primed frames may be attached before the cycle is repeated. Using the process described, a very smooth, brilliant enamel finish is produced.

Fenders or mud guards are roll-formed from coils of steel strip in a

Fig. 6—A view of the two overhead infra-red ovens used for baking the primer and second coat applied to bicycle frames. The Japanese characters on the white sign mean "Conserve Electricity"—a critically short commodity in Japan. Finishing room has a tile floor to make it easy to clean, and to assist in keeping dust to a minimum.



series of machines and operations closely paralleling U. S. practice. The formed fenders are degreased in a trichlorethylene degreaser and then Parkerized in a 3-tank setup similar to that previously described. Acid pickling is not necessary in this case because the fenders have no welding scale on the surface.

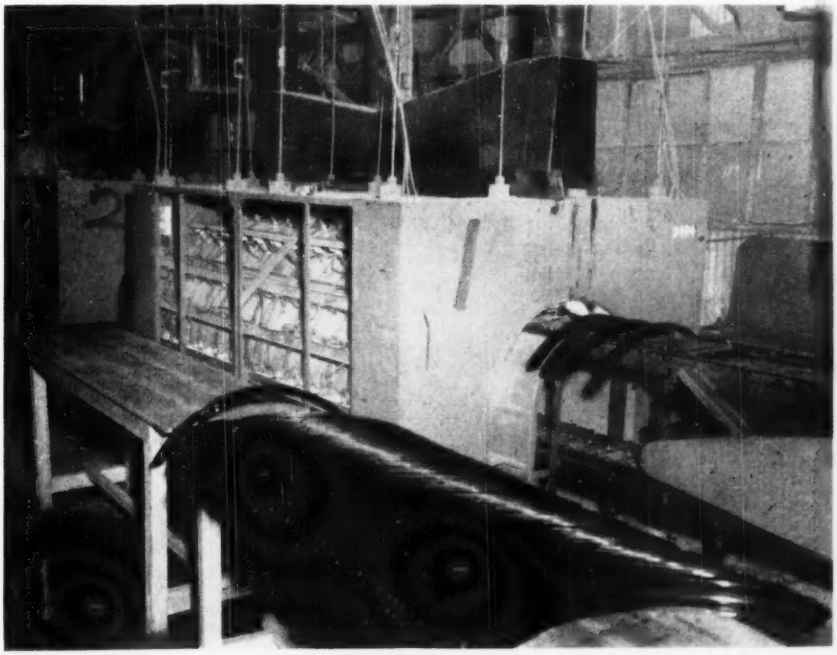
Treated fenders are wiped with steel wool and dipped in Berry Bros. black, high-luster primer-surfacer and laid on a slat conveyor for draining and baking (see Fig. 7). The slat conveyor transports fenders through two infra-red ovens, separated by a second coat dip tank, as shown in Fig. 7. The primer-surfacer coat is baked in 15 minutes at a temperature of 350 deg. Fahrenheit.

The mud guards are removed from the conveyor, inspected for "runs," which are sanded out, and then dipped in Berry Bros. gloss black synthetic No. 72 enamel, replaced on the slat conveyor and baked at about 325 deg. F. during a 15 minute conveyor travel through the second infra-red oven. Adding gold striping by hand, and applying the distinctive Miyata trademark (on bicycles for export only) by transfer (decal) completes the fender.

Electroplated Finishes

To provide an attractive contrast with the glossy black, gold striped bicycle frame assembly, as well as to protect working parts of the bicycle against corrosion, handle bars, gear cranks, brakes, hubs, pedal assemblies,

Fig. 7—A view of the exit end of the two-oven dipping and baking conveyorized installation for painting fenders or mud guards. As can be noted, the infra-red ovens are vented liberally.



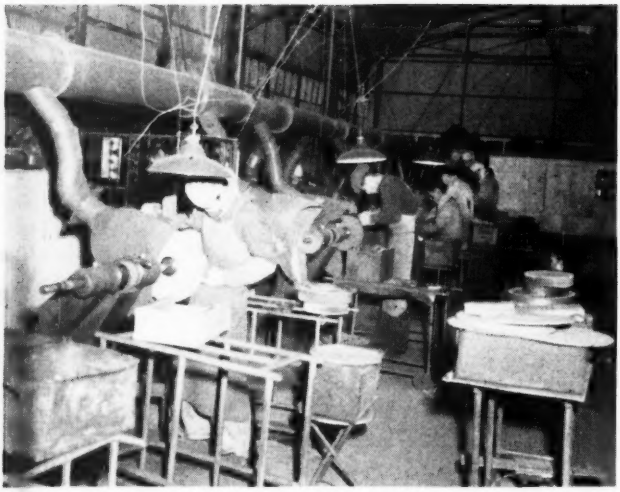


Fig. 8—One view of the polishing room. The air exhaust hood and collecting pipe are mounted above the wheels, instead of along the floor as most U. S. practice specifies. Detroit Abrasive Cement is used in setting up the polishing wheels.

and other parts on bicycles for export are nickel and chromium plated. Bicycles manufactured for domestic sale have chromium plated handle bars, but the other plated parts are finished in zinc plate, bright dipped in Unichrome Clear Dip. Plating processes include brass, nickel, chromium, and zinc deposited in still tanks, or in the case of nickel and zinc, also in plating barrels.

Polishing

Steel parts to be plated in a chromium or bright zinc finish, are polished. Since most of them have a good machined finish when they are delivered to the finishing department, no preliminary rough polishing is required. The following polishing cycle is generally followed:

1. Polish on 120 emery set-up wheel (dry).
2. Polish on 220 emery set-up wheel (use No. 100 tripoli—Japanese manufacture).
3. Polish on 320 emery set-up wheel, using No. 100 tripoli.

Polishing is accomplished on set-up wheels made from sewed cotton buff sections glued together, and operated at a rate of 8,000 surface feet per minute. As can be noted in Fig. 8, Japanese polishing stands are somewhat smaller than U. S. equipment. Also installed in the polishing room are a centerless polisher, and a polishing belt-backstand setup. Tubes of bicycle frame are polished by the centerless polisher; thus rubbing with Tonoko primer putty is eliminated.

Brass Plating

Differing from the conventional U. S. cycle of copper-nickel-chromium, the finishing cycle used for steel parts to be chromium plated begins with brass plating. Nickel and chromium coats are then deposited as usual. Polished steel parts are processed for brass plating as follows:

1. Rack and clean (no current) for 40 minutes in a boiling solution containing 5 per cent soda ash and 5 per cent caustic soda.
2. Water rinse.
3. Dip in 3 per cent sulfuric acid.
4. Water rinse.
5. Dip in 5 per cent cold sodium cyanide.
6. Brush in water using a clay similar to Bentonite.
7. Water rinse.

8. Brass plate.
9. Cold water rinse.
10. Hot water rinse.

Brass plating is done in a steel tank of about 175 gallons capacity (see background of Fig. 9) in the following solution, operated under the following conditions:

Copper cyanide	3.6 oz./gal.
Zinc cyanide	1.2 oz./gal.
Sodium cyanide	7.4 oz./gal.
Sodium carbonate	1.4 oz./gal.
Temperature	100 deg. F.
Voltage	2.5-3.0 volts
Current density	8 amp./sq. ft.
Time	40 minutes
Anodes	80 per cent copper, 20 per cent zinc

Power is supplied to the brass plating tank (as well as to two nickel tanks) by a 960 amp., 6 volt motor generator set. An exhaust fan, powered by a 3 h.p. motor, removes fumes from the brass plating tank.

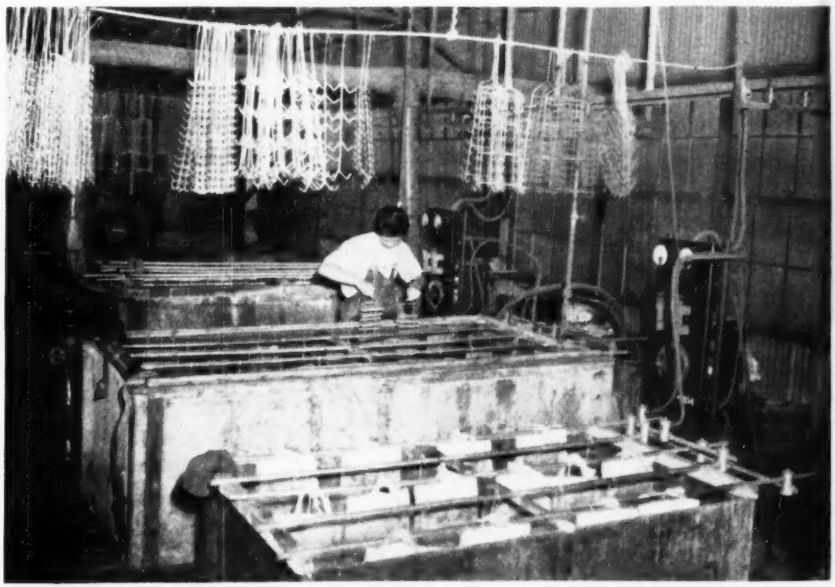
Nickel Plating

Brass plated parts are buffed, racked, cleaned and nickel plated for 40 minutes in the lead-lined wood tank shown in the center of Fig. 9. The nickel plating solution composition is as follows:

Nickel sulfate	20.0 oz./gal.
Nickel chloride	2.0 oz./gal.
Boric acid	2.0 oz./gal.
Ammonium chloride	2.0 oz./gal.
pH	5.8
Voltage	2.5 volts
Current density	10 amp./sq. ft.

A lead steam coil provides heat to maintain a temperature of 95-100 deg. F. Anodes are 99 per cent nickel, and at present are obtained, in part, by electrolytic purification of nickel

Fig. 9—Brass and nickel plating tank section of the plating room. Current is conducted to the tanks through cables instead of bare copper bus bars—another variation from U. S. plant design. Filter for nickel solution is located at right of center tank.



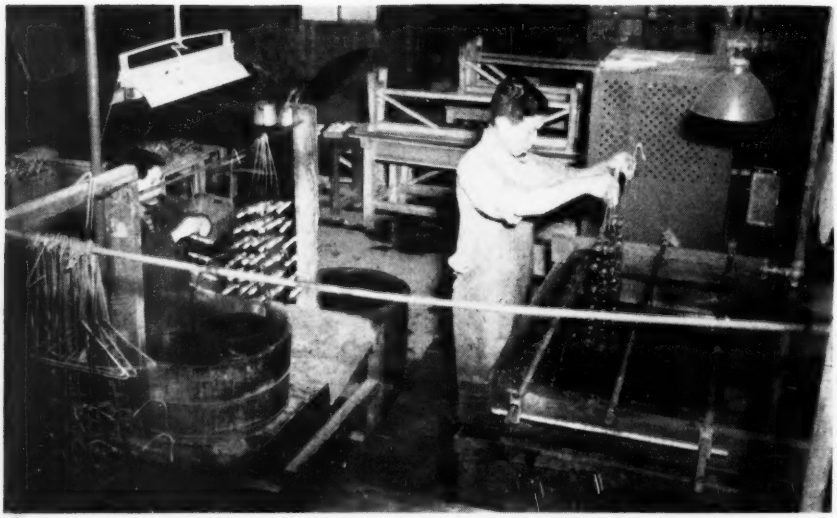


Fig. 10—The chromium plater is removing a load of chromium plated front axles from the tank. One of the few women employed in the plant can be seen racking up parts to be plated.

scrap. They contain impurities that make the plater's job more difficult. Heavy canvas anode bags are used to assist in controlling deposit roughness, and a filter (Mokuzai Industrial Company)—quite similar to some of the portable filters of American manufacture—is used to keep the solution clean.

Chromium Plating

Nickel plated parts are buffed in the usual manner, using a white lime buffing composition, wiped with dry chalk, and racked or wired for chromium plating. Following a dip in 10 per cent sulfuric acid and a water rinse, parts are chromium plated for 2 to 3 minutes in the following solution:

Chromic acid	33.5 oz./gal.
Ammonium fluoride	0.4 oz./gal.
Chromium sulfate	0.2 oz./gal.
Temperature	77 deg. F.
Voltage	4.5 volts
Current density	50-70 amp./sq. ft.
Anode to cathode ratio	3.5

A thickness of 0.00002 to 0.00005 inch of chromium is deposited. Plating is done in a plain steel tank (see Fig. 10) and lead anodes containing 4 per cent antimony are used. A double water rinse (dragout, and clear rinses) is used following plating. Plated parts are generally very bright, but a light color buffing, using green chrome buffing compound, is employed as necessary. A 300 ampere, 10 volt rectifier, which can be seen in the right background of Fig. 10, furnishes power for the room-temperature chromium plating process.

Bright Zinc Plating

Using the same preparatory cycle as that described for brass plating, such parts as gear cranks, bolts, front fork crown covers, hubs, spokes, and pedal assemblies are zinc plated. The plating solution and operating conditions are as follows:

Zinc cyanide	8.0 oz./gal.
Sodium cyanide	6.0 oz./gal.
Sodium hydroxide	6.7 oz./gal.
Thiourea	0.13 oz./gal.
Ratio, total sodium cyanide to zinc	2.5-2.6
Temperature	68-77 deg. F.
Voltage	1.1 volts
Current density	20-30 amp./sq. ft.
Time	40 minutes
Anodes	electrolytic zinc
Anode to cathode ratio	2

Plain steel plating tanks are employed, and power is furnished by two rectifiers.

After parts are zinc plated, they are given a Unichrome Clear Dip treatment, after which they emerge with a bright zinc finish of high luster. A thickness of about 0.005 inch zinc is deposited, and the bright dip removes 0.001 inch or less, leaving an ample corrosion-resisting thickness of zinc which is further fortified by the transparent coating formed on the zinc by the Unichrome dipping process. Fig. 11 is a view of the well planned, efficient, U-shaped bright zinc plating setup.

Barrel Nickel Plating

Steel parts to be barrel plated are tumble polished in steel barrels, rotating at 20 r.p.m., for 7 to 8 hours. A mixture of sand and water containing ½ to 1 per cent caustic soda supplies abrasive and brightening action. Parts are then rinsed, and tumbled in wet sawdust for 8 to 24 hours, after which they are cleaned, acid rinsed, and barrel plated. The nickel solution used is:

Nickel sulfate	25.0 oz./gal.
Ammonium chloride	1.3 oz./gal.
Boric Acid	5.3 oz./gal.
Sodium sulfate	6.7 oz./gal.
pH	5.4 to 5.5
Temperature	104 deg. F.
Voltage	4. volts

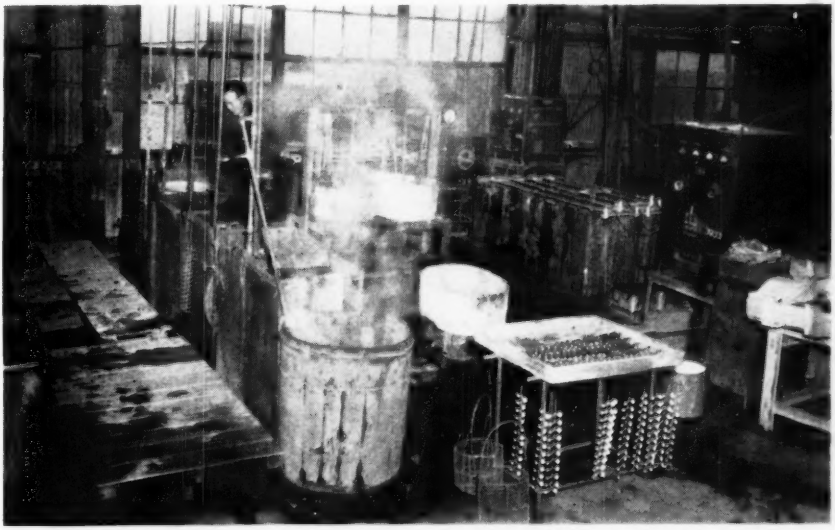


Fig. 11—Mr. T. Okazaki, plating foreman, dips a load of zinc plated parts in the Unichrome Clear Dip, after which cold and hot rinses are used to leave the part bright and dry. Rectifiers are installed immediately adjacent to the plating tanks.
(*All photos by PRODUCTS FINISHING*)

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A 30 by 12-inch wood barrel is employed, rotating in a lead-lined wood tank. Plated parts are rinsed, and dried in a heated centrifugal dryer.

As can be noted from the above, finishing practice in this plant does not differ too radically from current or previous U. S. practice in some respects. Material shortages, some difference in design and construction of plating equipment, some different processes, are evident. There is a basic difference in fundamental approach to industrial processes, in that the hourly operation cost is much lower than in the U. S. However, the final products, in this case many kinds and models of Miyata bicycles, have established and maintain an enviable record for satisfactory service.

ACKNOWLEDGMENT

The author acknowledges with sincere thanks the cooperation of Mr. K. Yamashita, plant manager and managing director of Miyata Works, Ltd., and other company officials, in making possible the preparation of this article.

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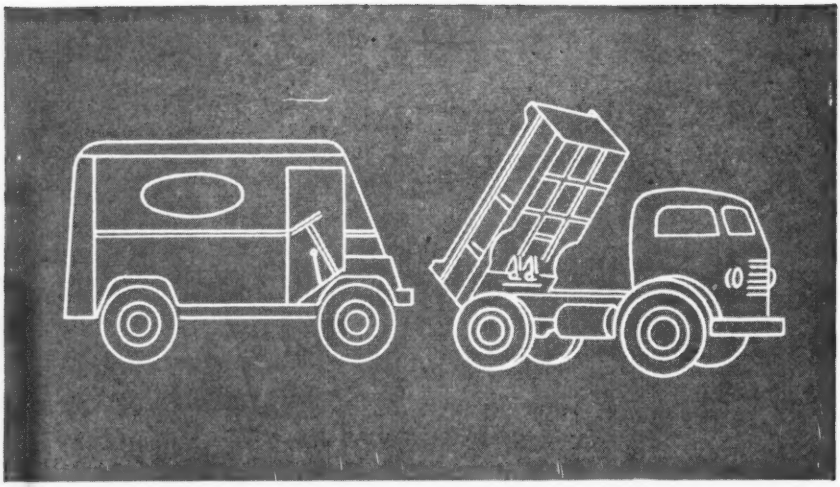
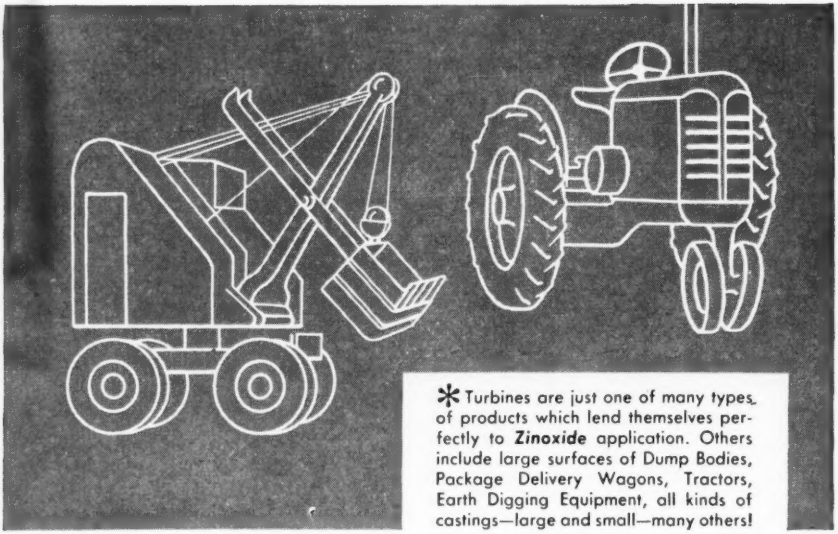
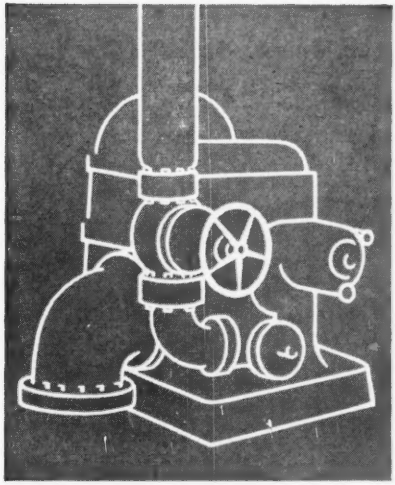


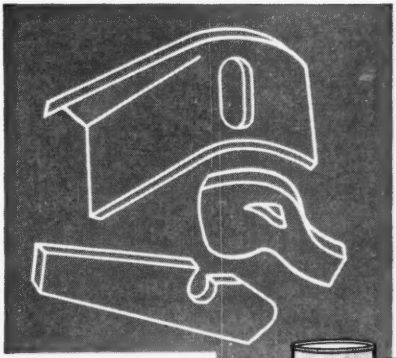
Lowe Brothers New ZINOXIDE problems of conventional



*Turbines are just one of many types of products which lend themselves perfectly to **Zinoxide** application. Others include large surfaces of Dump Bodies, Package Delivery Wagons, Tractors, Earth Digging Equipment, all kinds of castings—large and small—many others!



overcomes the metal primers



This advertisement is based on facts from Lowe Brothers industrial case history files.

Cuts finishing costs!

Having proved its superiority through several years of extreme testing . . . on every type of surface, in all climates . . . Lowe Brothers "Finishing Specialists" proudly offer *Zinoxide* for general industrial consumption. One series of *Zinoxide* tests was made by a large turbine manufacturer* who now uses it in place of a primer he had been using for 10 years. His tests proved that *Zinoxide* dried faster, gave a smoother surface, eliminated sanding, and had much greater durability!

Here are outstanding features of Lowe Brothers *Zinoxide* which assure better finishing results and effect new economies:

- Eliminates the conventional bad after-effects of "overspray"—no rough primer surface to sand before finishing.
- Quick drying! Dries to handle in 15 minutes!
- Can be baked at a temperature of 300° for 15 minutes or more.
- Pigments used are the best rust inhibitors known to the paint industry.
- Amazingly durable—castings primed with *Zinoxide* can be stored outside—exposed to the elements for long periods if necessary!
- Can be recoated quickly with lacquer or with any type of enamel.

If you're interested in eliminating some costly finishing problems, call on a Lowe Brothers "Finishing Specialist" for additional factual evidence of *Zinoxide*'s superior qualities. Then put it to the test yourself! Write today.

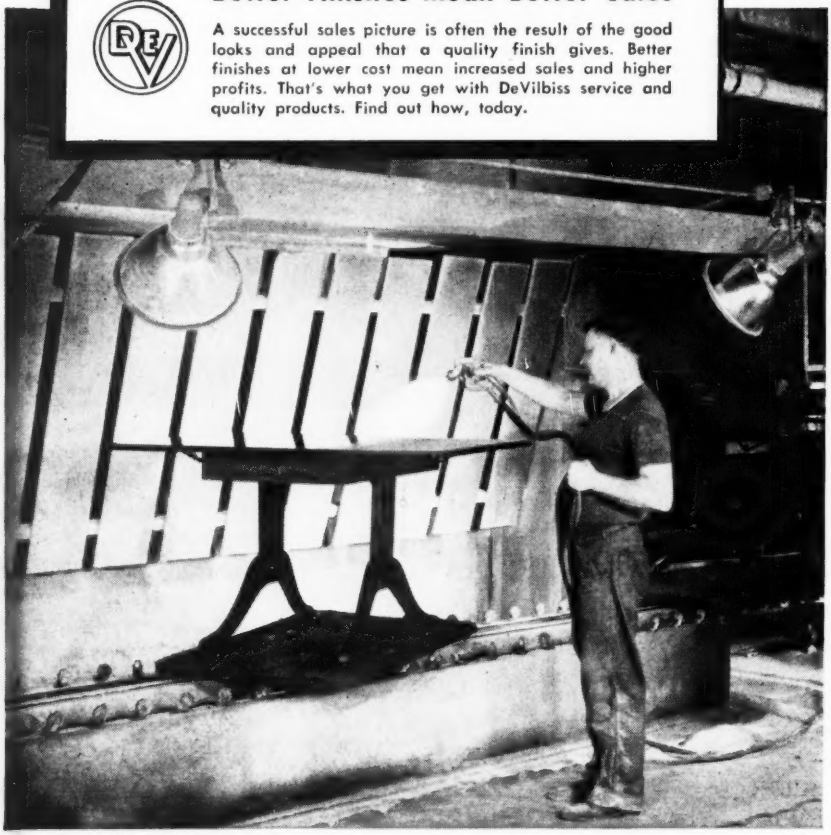
THE LOWE BROTHERS COMPANY • Dayton 2, Ohio
Industrial Division

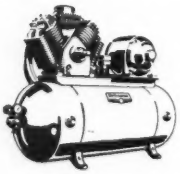
LEADERSHIP THROUGH CONSISTENT SERVICE

Lowe Brothers
FINISHES FOR INDUSTRY

Better Finishes Mean Better Sales

A successful sales picture is often the result of the good looks and appeal that a quality finish gives. Better finishes at lower cost mean increased sales and higher profits. That's what you get with DeVilbiss service and quality products. Find out how, today.





Air Compressors

Hose and Connections

Spray Guns

Furniture sales start with the finish!

For years, manufacturers of fine furniture have depended on DeVilbiss spray equipment to achieve the quality finish that complements excellent design and fine craftsmanship.

In this picture, the operator is using the new, lightweight DeVilbiss JGA spray gun to apply a second coat of lacquer. Only one pound, six ounces in weight, this gun makes furniture finishing—and all other finishing and painting jobs—quick and easy with all types of materials.

DeVilbiss floor-type booth exhausts fumes, overspray and vapor, and the safety-approved lights give scientific illumination. Dependable air and fluid flow is assured by the use of a DeVilbiss air transformer, hoses and paint pumps. A DeVilbiss air compressor completes this integrated spray system—all units balanced with one another for maximum efficiency.

Electrostatic, manual, automatic, steam or hot material – our broad experience covers *all* spray-finishing methods. Your nearest DeVilbiss supplier will be glad to give you complete data on the proper equipment for your spraying operations. Call him today, or write to us direct.

THE DEVILBISS COMPANY, Toledo, Ohio

Windsor, Ontario • London, England • Santa Clara, Calif.

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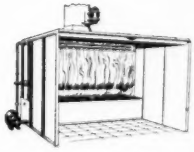

Spray Booths

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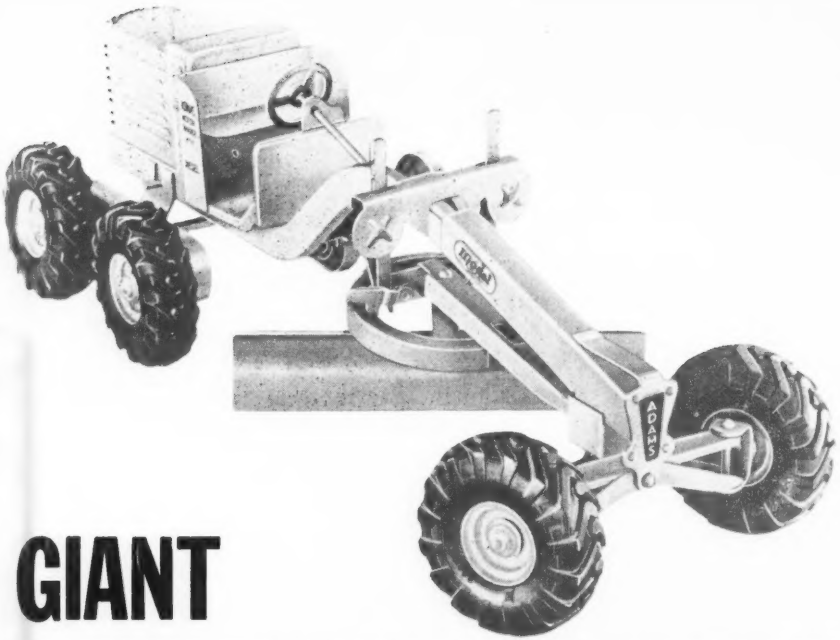


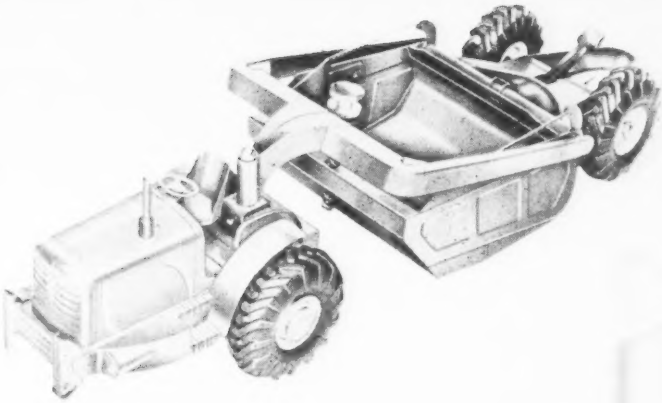
GIANT CONSTRUCTION EQUIPMENT Gnome Size

To paint small complicated parts economically and produce a finish that is tough, yet has "eye appeal," is a problem that has confronted many men responsible for the finish of consumer articles. Both spraying and dipping, as well as all accessory processes, are used for finishing the Doepke Model line of toys.

AT peak production, a Euclid Dump Truck, a Heiliner Scraper, an Adams Road Grader, a Unit Crane, or a La-France Aerial Ladder Fire Truck rolls off the final assembly line of Charles Wm. Doepke Manufacturing Co., Inc., Rossmoyne, Ohio, every 30 seconds. With the exception of motors, many of the regular operations and modern techniques that are used in automobile plants may be found in this modern plant, an example of high efficiency.

The toys are exact replicas of actual construction and fire-fighting equipment. To achieve detailed realism, the company obtains permission from the manufacturer and works from the blue prints of the real machines, scaling all parts down to about one-sixteenth actual size. Each earth hauler, for example, requires more than 70 individual parts. Consequently, the toys not only look like the real thing, but can

By FRANK L. BONEM
Associate Editor



be operated and will perform in a manner very similar to that of the large equipment.

Manufacturing

The principal raw materials, 16 to 20 gauge steel and aluminum, are purchased in flat sheet stock or coil and stored in the center aisle, next to the line of punch presses (see Fig. 1).

From storage, sheet steel is first moved to shearing presses by an overhead crane. After being cut to smaller size, the metal is moved to the punch press line where a total of 17 presses stamp out the many parts comprising a toy. Many of these punch presses use progressive dies so that a complete job may be formed by each cycle of the press.

After forming, the parts that have rough edges are deburred by tumbling.

From the tumbling barrel or press line, parts are moved to two welding sub-assembly lines which are located at the end of the punch press line (see Fig. 2). In these spot welding operations, special fixtures are used to hold the many small pieces in their correct position. Designed by Doepke engineers, they speed production to a considerable extent.

Reaching the end of the sub-assembly line, parts are transferred to the main assembly line (see Fig. 3) which runs at right angles to the other lines. Again, all fastening is by spot welding, thus assuring a rugged construction throughout.

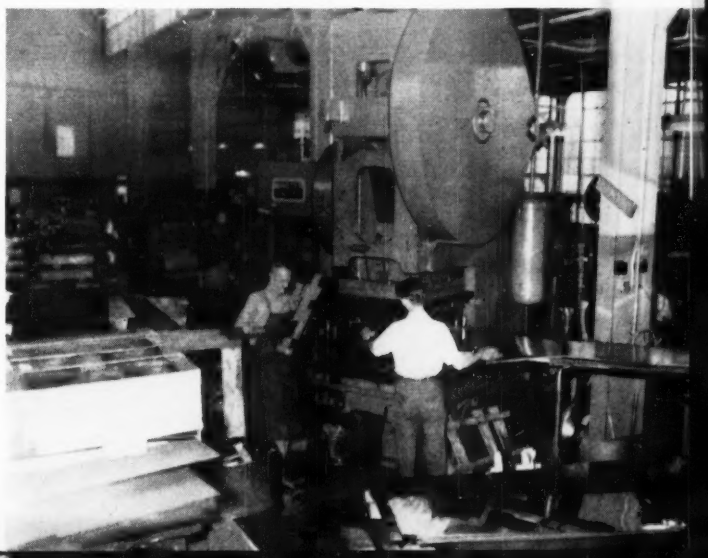


Fig. 1 — A 150-ton Verson Press with a progressive (3-station) die forms bodies for the La-France Aerial Ladder Truck.

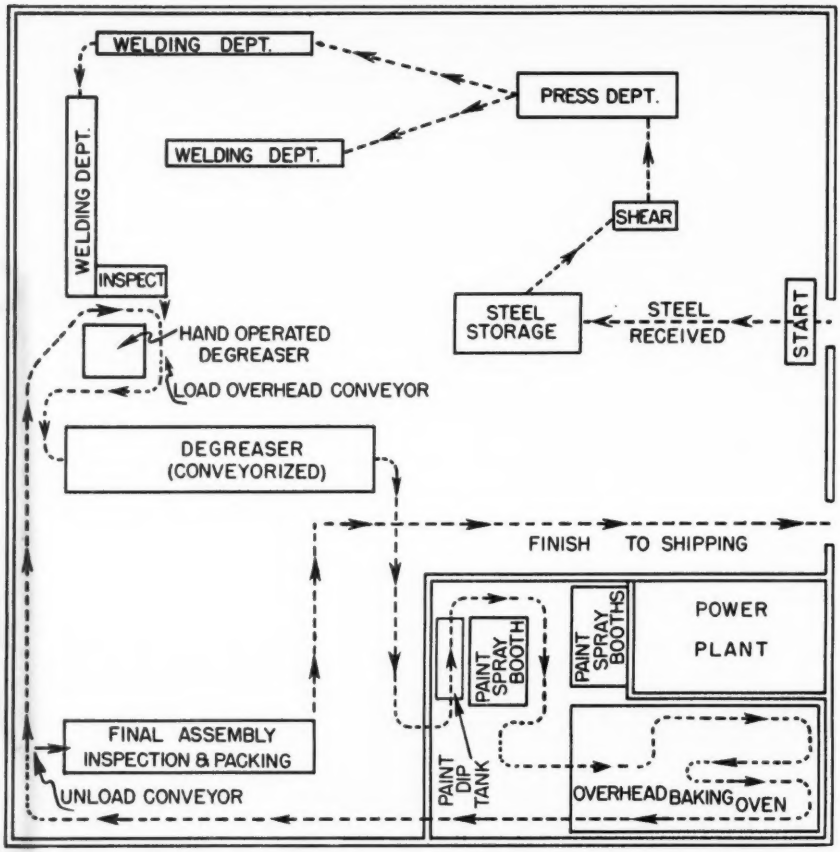


Fig. 2—A schematic layout of the production and finishing departments at the Charles Wm. Doepke Manufacturing Company.
(Drawing courtesy Charles Wm. Doepke Manufacturing Company)

Finishing

After assembly, parts are given a final inspection and then hung on a Richards-Wilcox Zig-Zag Monorail Conveyor. The first step in the finishing process consists of cleaning the metal in a Detrex degreaser. This degreaser, 40 feet long by 14 feet high, uses a vapor spray of trichlorethylene at 180 deg. F. A purifying still is connected to the machine to keep the solvent, which is used at a rate of approximately 54 gallons per week, clean (see Fig. 4). The pure solvent boils off and is returned to the degreaser, leaving the sludge behind.

The Zig-Zag lightweight conveyor is readily adjustable in speed from 1 to 20 f.p.m. However, its usual speed is between 10-12 f.p.m. Hangers on the conveyor are spaced 2 feet apart but

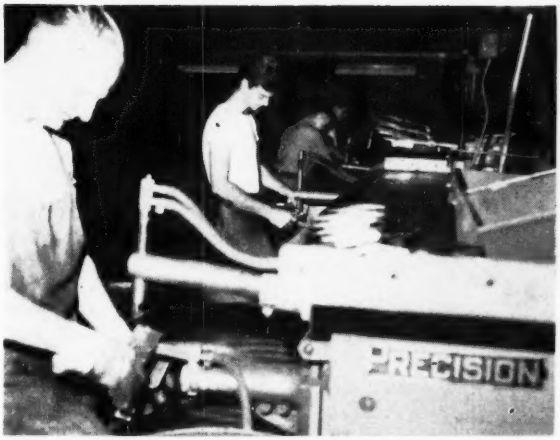


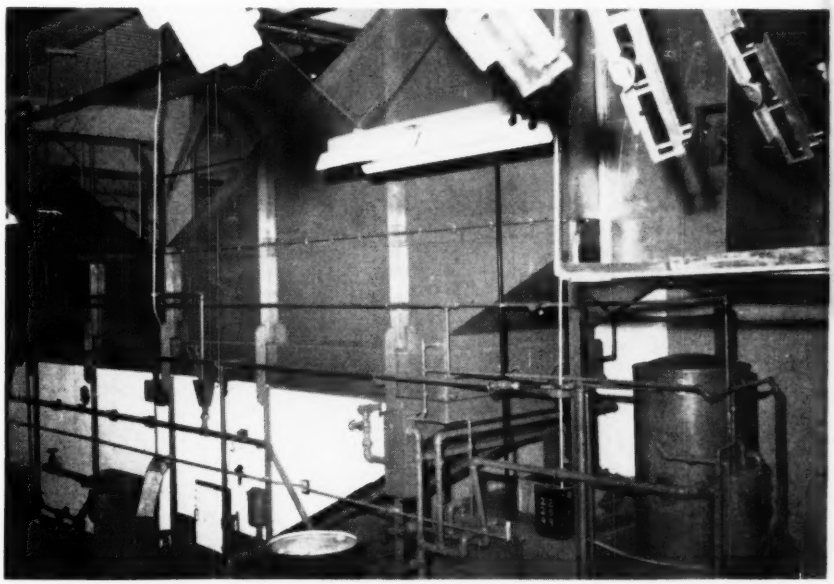
Fig. 3 — A shot along the main assembly line showing the row of Precision Spot welders used for assembly of Model toys.

●

can be spaced at 6-inch distances if rush periods, like the months before Christmas, demand it.

From the degreaser parts move to the paint department which was completed, as a new addition, in January 1951. Depending upon the toy being finished, three methods are used for painting: dipping, spraying, and dipping, followed by a sprayer mist coat. Figure 5 shows the painting of fire trucks by the automatic dip method. Five synthetic enamels, made by the Moran Paint Company, Interchemical Corporation, and Cincinnati Varnish,

Fig. 4—Bodies of fire trucks may be seen emerging from a Detrex degreaser. Note solvent still, used for keeping the solvent clean, in right foreground.



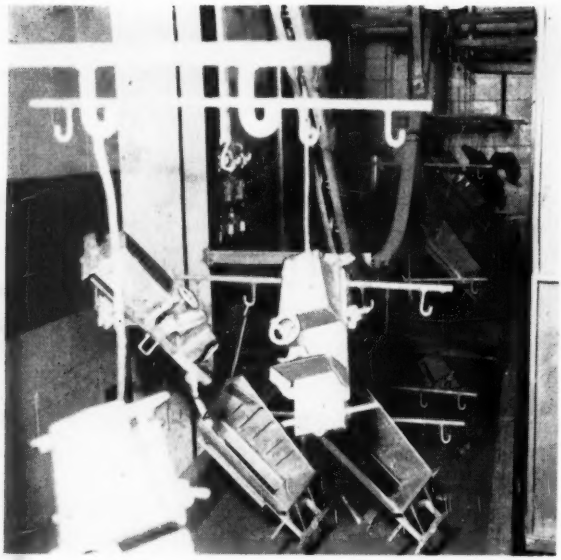


Fig. 5—Parts of the Heiliner scraper are finished in brilliant red by the dip method. Automatic dipping results in a better finish and saves manpower.

●

are used for the various toys; for the ladder truck, fire engine red; for the road grader, yellow; for the unit crane, orange; for the dump truck, olive drab; and for the scraper, brilliant red.

Since only one model is fabricated and finished in any production run, speed in change-over from dipping to spray painting is necessary to avoid costly shut-downs. This obstacle was easily overcome by installing a water wash paint spray booth between the dip tank and four standby dry spray booths. Due to this arrangement, one conveyor can serve for any paint process or cycle.

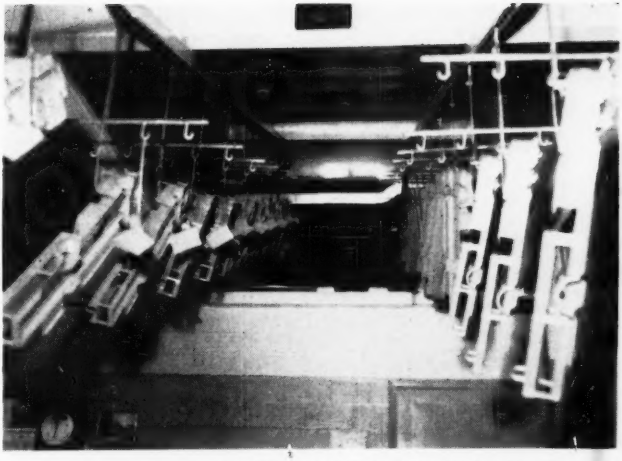
Spray painting is necessary for such units as the Adams Road Scraper (see Fig. 6). For ease in painting, special fixtures were developed in which the toys are mounted. In these fixtures the operator can turn the toy about its own longitudinal axis and in a circle with his left hand, while holding the spray gun in his right hand. Thus, full coverage is achieved on a toy of complex shape in record time.

The M & E spray paint booth is long enough to provide four painting stations on the inside. It has two fans rated at 33,000 cu. ft./min. for exhausting air and fumes, and a 800 g.p.m. pump for circulating the water over the water curtain located in the back of the spray booth. About 8 to 10 gallons of water are needed per day for makeup. The DeVilbiss spray guns are operated at 70 p.s.i. air pressure and 20 p.s.i. fluid pressure.

Although the same enamels are used for both painting and dipping, the viscosity differs with the method. For dipping, a viscosity of 18 seconds on the Zahn No. 3 cup is used while for spraying the viscosity is cut down to 23 seconds. For either method one coat has been found to be sufficient. However, some of the toys are of such shape that, after dipping, a fine mist coat must be applied by spraying to obtain the desired finish gloss after baking.

After painting, the toys travel to a Young & Bertke baking oven, as shown in Fig. 7. Parts travel through this oven for 125 feet for a baking time of 25 minutes. The temperature is automatically controlled in the range of 275 to 325 deg. F. The firing units of this oven are four fuel oil burners. These burners, made by J. O. Ross Engineering Corporation, use 9 gallons of oil per hour to maintain an oven temperature of 400 deg. F. The hot air,

Fig. 7—A view of the entrance to the bake oven. Toys enter the oven (left) and leave (right).



filtered and circulated by a forced draft fan, is adequate for a load of 6,700 pounds of ware (including conveyor) per hour.

The location of this oven is of considerable interest. Although the firing units and the fan are on the ground floor, the actual baking area, as may be seen from Fig. 7, is below the ceiling. (In the summer a reversible ventilator exhausts the hot air, present around the oven in the enclosed oven-room, to the outside; in the winter the hot air is switched to the inside to preheat make-up air for the plant.) Thus, considerable floor space is saved, and in winter full usage is made of the available heat.

From the bake oven, the conveyor brings the parts to the final assembly line where rubber wheels and other subassemblies are attached to the chassis. It is here that the final finishing touch—adding paper decals for name plates and lights—is made.

One corner of the plant is devoted to the repair department where a miniature job shop has been set up. Here, all models are repaired and re-

Fig. 6—A view of the 4-station spray booth. Note that the DeVilbiss spray painting tanks are located under the "false working floor" of the booth, thus keep the aisles clear. The grader is held in special fixtures while being painted.

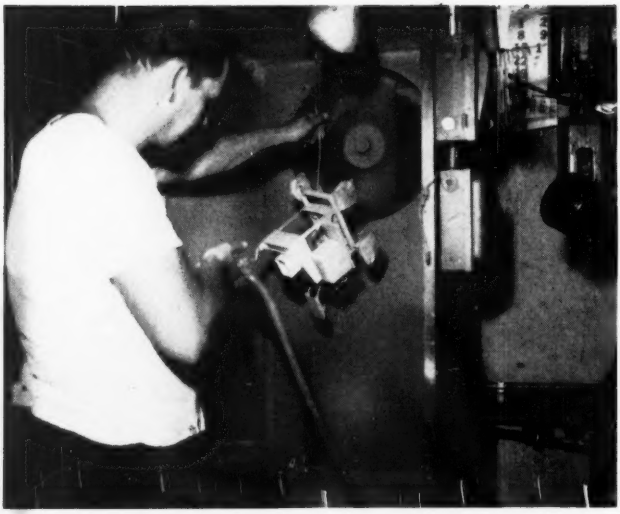


Fig. 8—The dry paint booth in the repair department, used exclusively for refinishing repaired toys. (*All photos by PRODUCTS FINISHING*)

finished by spray painting (see Fig. 8).

From the foregoing it may be seen how versatility in production and finishing has allowed the plant to expand its production from 32,000 units in 1946, the plant's first year, to over 273,000 units in 1950. Today, the production rate is from 1200 to 1300 toys per day, and it is estimated that an increase of another 13 per cent could easily be accomplished with present facilities and no increase in manpower.

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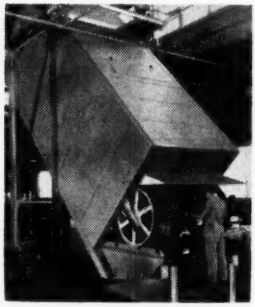

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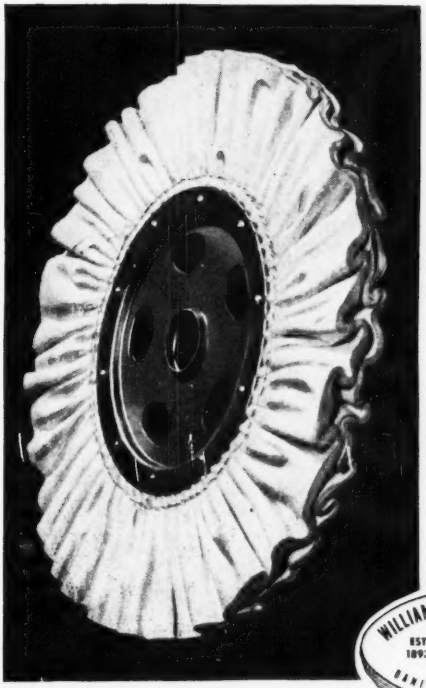

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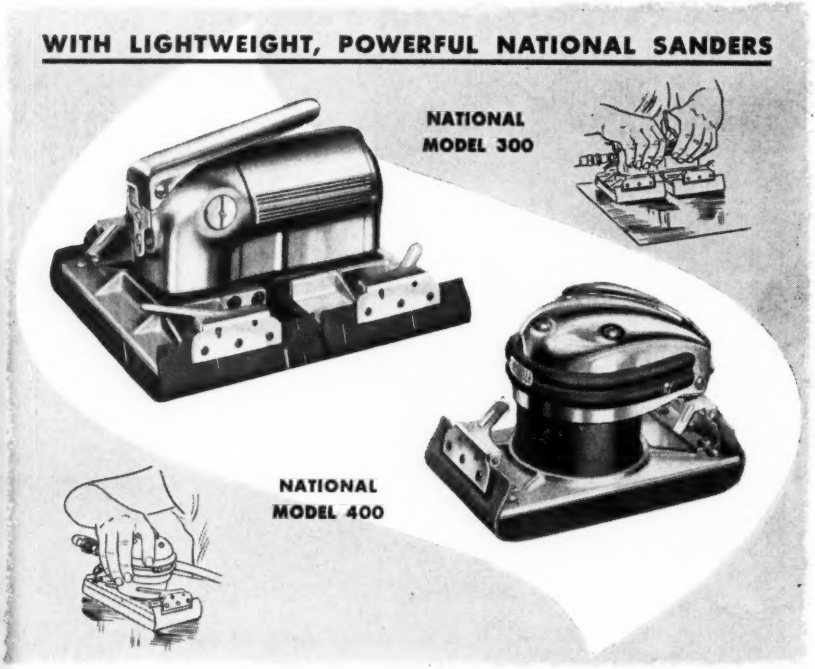

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Spotlighting FINISHING Progress

Current Distribution in Chromium Plating

IN a paper before the 100th Electrochemical Society Meeting, Sidney Barnartt, Westinghouse Research Laboratories, described work to design an anode that would yield relatively uniform primary current distribution over a cathode consisting of a cylinder with hemispherical ends. The designing was carried out empirically by mapping equipotential surfaces in an electrolytic model. Current distributions derived from the equipotential maps were compared with the distribution of chromium deposited from chromic acid solutions. The application which prompted the study involved the electrodeposition of metals, such as chromium, with uniform density over the entire surface of a test specimen.

The current distribution problem involved in this study is of the following general type: given an equipotential surface over which the potential gradient is uniform (or varies in a stipulated manner), solve for equipotential surfaces outside of it. This kind of problem is an important one which arises frequently in electroplating. In practice the minimum metal thickness over an article to be plated is specified as a fixed percentage of the mean, and the other electrode must be designed to accomplish this.

The designing was carried out using the electrolytic trough method of mapping equipotential surfaces between electrodes. The electrical circuit is essentially an A.C. Wheatstone Bridge. A movable probe, dipping just below the sur-

By DR. ALLEN G. GRAY

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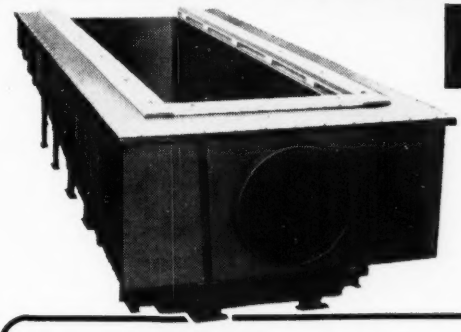
A Monthly Digest of Current Technical Progress Indicating Significant Trends and Developments in the Finishing Industry



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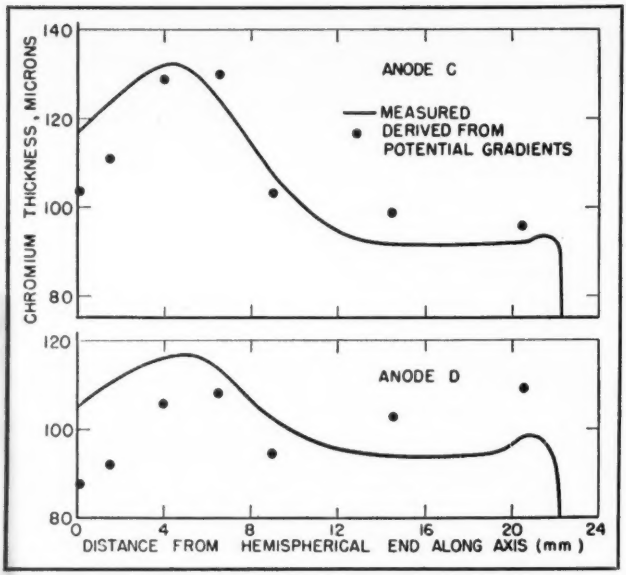

Fig. 1—Curves show the comparison between the measured chromium distribution and that derived from potential gradients.
(Illustration courtesy The Electrochemical Society, New York, N. Y.)

face of the electrolyte, is connected to the potentiometer through a detector. The detector shows minimum voltage whenever the probe is on the equipotential line corresponding to the setting of the potentiometer. In this way equipotential lines are readily traced out in the plane represented by the top surface of the electrolyte. The probe was carried by an accurate, well-balanced pantograph, by means of which traces of the equipotential lines were made on a drawing board near the tank.

Copper electrodes in 0.005 per cent potassium dichromate were satisfactorily utilized for potential mapping by the electrolytic trough method with negligible polarization errors. Cathode current distributions derived from the equipotential maps were compared with the distribution of electrodeposited chromium. Chromium deposition was carried out from a bath containing 250 gm./l. chromic acid and 2.5 gm./l. of sulfuric acid at 113 deg. F.

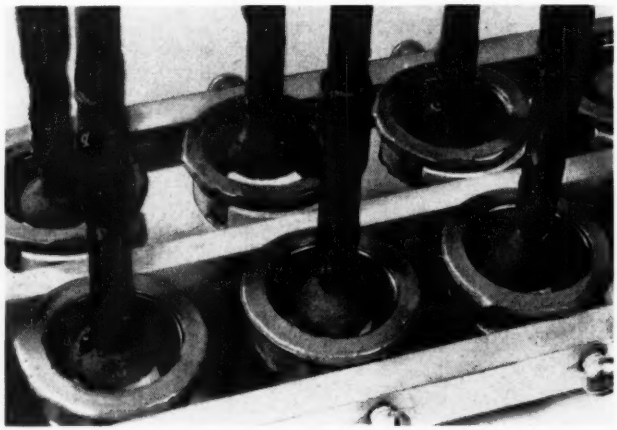

Fig. 2 — This setup shows stop-off and appropriate anode used for chromium plating an aircraft bushing.
(Photo courtesy Nutmeg Chrome Corp., West Hartford, Conn.)

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Chicago 40, Illinois

with a mean cathode current density of about 150 amp./sq. ft. A mean thickness of roughly 100 microns was deposited. The plated specimen was cut in a plane containing the axis of symmetry and the chromium distribution was measured microscopically. Figure 1 shows the comparison between the measured chromium distribution and that derived from potential gradients. Deviations between the two distributions which are a measure of the effect of anode polarization during chromium plating, are small. Figure 2 shows a commercial application of chromium plating using a conforming anode for uniform current distribution on an aircraft bushing that relies on a heavy deposit of chromium to dampen vibration.

E. S. Snavely and Norman Hackerman, University of Texas, reported on the effects of adding sulfates of certain tripositive cations to chromium plating baths. Certain concentrations of gallium or aluminum sulfates were found to be advantageous in securing bright deposits over a wide range of current densities in a chromium plating bath of the 100:1 type. It was reported that the characteristic crack network was reduced, giving the plate better protective ability, although it was never entirely absent. These sulfate additives were neither beneficial nor deleterious with respect to hardness, flexibility, or current efficiency.

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* * *

Methods for Measurement of Organic Finish Thickness Compared

THE durability, appearance, and other physical properties of paint, varnish, and lacquer finishes are greatly influenced by the thickness of the films. There are many types of instruments used for measurement of such film thicknesses. Group II of Subcommittee XVIII on physical properties of materials of Committee D-1 on Paint, Varnish, Lacquer and Related Products of A.S.T.M. have studied eight different types of measuring instruments requiring techniques to determine the thickness of organic films on metals. Emphasis was placed on techniques best suited for measurement of film thicknesses both above and below 0.5 mil.

One of the instruments investigated was the Magne-Gage, which is based on the magnetic principle of measurement. The readings obtained with this instrument are related to the magnetic reluctance introduced by the film and can be converted to film thickness by reference to calibration curves supplied with the instrument. The instrument is adapted to various applications and thicknesses by means of readily interchangeable magnets which

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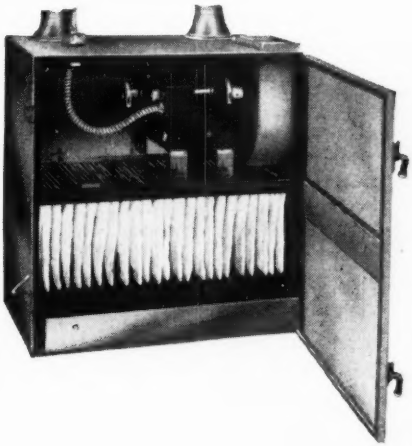

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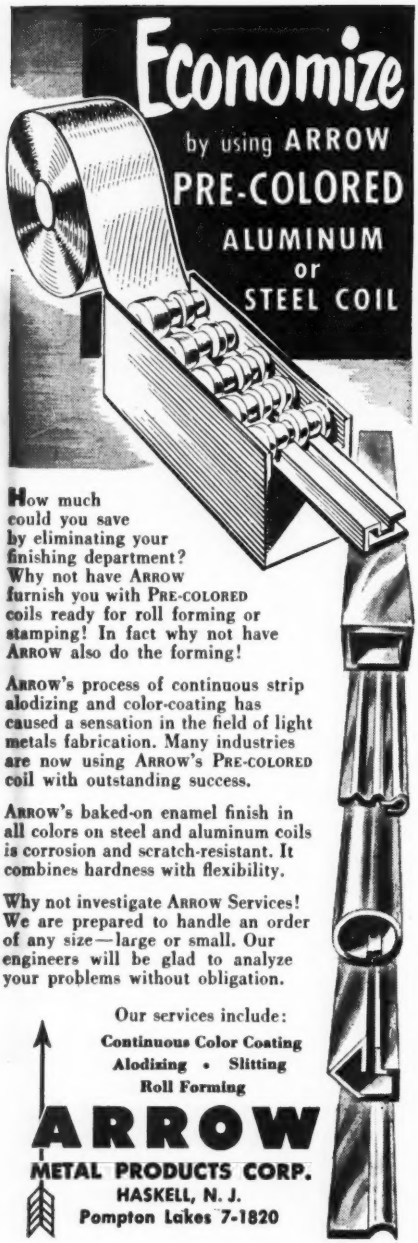

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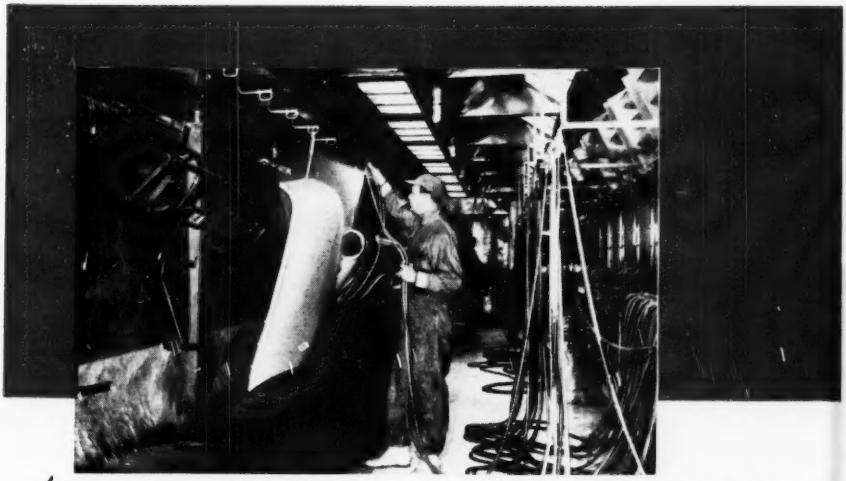
differ principally in size and strength. Two other portable film thickness machines based on the magnetic principle were investigated; namely, the Krouse machine and the Elcometer.

Another film thickness instrument used in the Committees' work was the General Electric gage. This operates on the principle that any non-magnetic material applied to an iron or steel base is equivalent to an air gap interposed between the magnetic base and the two magnetic pole tips or flanges of the gage head. This machine is usually calibrated with sheets of cellophane or celluloid of known thicknesses. The Filometer is an instrument used to measure film thickness of non-magnetic materials applied to a non-magnetic base. The Lipson gage is a film thickness instrument for measuring non-magnetic coatings on steel. It requires a source of alternating current which is used to energize a solenoid containing an iron core.

Two types of electronic micrometers were used in this A.S.T.M. study. One was the R. W. Carson micrometer and the other was the Jack and Heinz electronic micrometer. Another method studied was the measurement of the cross-section of the paint film by mounting specimens for microscopic examination. It was thought that although this method has merit, the results obtained are somewhat dependent upon the technique of the operator and therefore it was not considered as an ideal one for an A.S.T.M. method. One technique which was used in some of the work was the determination of the weight of paint over a given area. If the specific gravity of the paint is accurately known a calculation can be made of the film thickness applied. Although this method is used for certain indirect types of control on coatings it was not given enthusiastic support by the investigators.

Another technique investigated for film thickness measurement was the use of a micrometer of the dial type.



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It was recommended that such an instrument should have a 4-inch dial, which is large enough to be read directly to 0.0001 inch, with an estimate to the nearest 0.00001 inch. The pressure foot or that part of the micrometer contacting the film is limited from 1/6 to ⅛-inch in diameter and is flat on the bottom. The load on the pressure foot is restricted between 20 and 40 p.s.i. The committee pointed out that when such a gage is used to measure film thickness to 0.0001 inch, it is necessary to have a satisfactory means for holding the panel in place.

To decide on the relative merits of the various methods the A.S.T.M. Committee making the study supplied an individual set of six panels to each of seven laboratories. The results obtained have been discussed in detail by E. J. Dunn, Jr., National Lead company, in an A.S.T.M. Bulletin. The data appeared to follow a pattern which emphasized the importance of proper calibration of instruments. Microscopic measurements were found to agree quite closely with micrometer measurements for the thicker films. However, in the case of the thinner films the microscope seemed to give high results. It was reported that the micrometer values were a good average of all the values. On this basis, it was suggested that the dial micrometer be used as a basis for comparing or calibrating other instruments.

In one series of tests an additional instrument was included; namely, the Interchemical Wet Film Thickness Gage. The wet film thickness gage was adapted to dry film thickness measurements. Results with the Interchemical Wet Film Thickness Gage were consistent, but for those films below 0.5 mil thickness, results were on the high side. It was pointed out that this appears to be a matter of calibration to bring the results in line with the other instruments.

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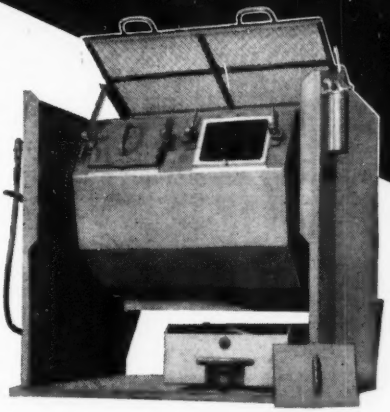

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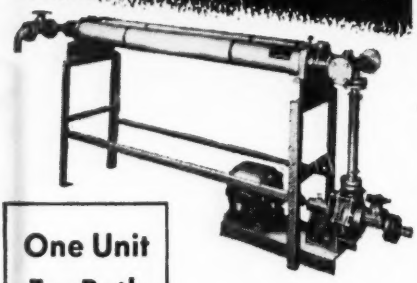

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The work of the Committee showed that the measurement of film thickness for very thin films presented problems not encountered with heavier films (that is above 0.5 mil). The dial micrometer results were quite uniform for the 0.4 mil. thicknesses, but unsatisfactory for 0.05 mil films. The weight-density method gave reasonably consistent results although it was decided to be too time-consuming to make an acceptable A.S.T.M. method. The importance of proper calibration of all instruments with standards in the range 0.1-0.2 mil thick was emphasized.

The Committee decided that the supplementary method to Method D 1005-49T should be based upon the Magne-Gage and a proposed tentative method is in the process of being considered by Committee D-1. However, it was pointed out that the General Electric Thickness Gage gave results almost as consistent as the Magne-Gage.

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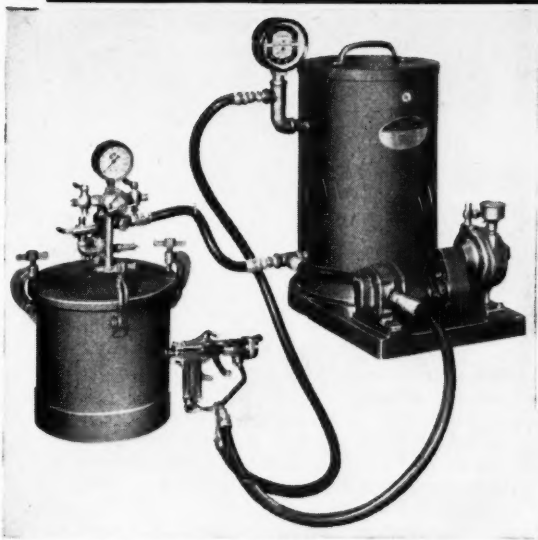

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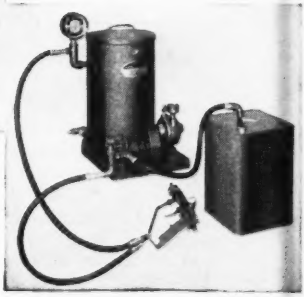

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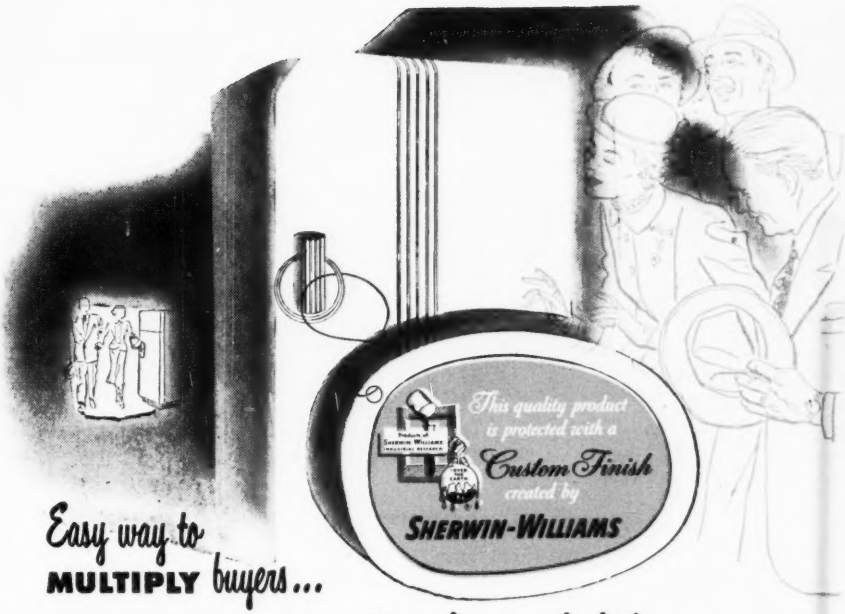

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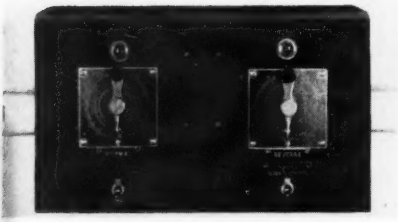


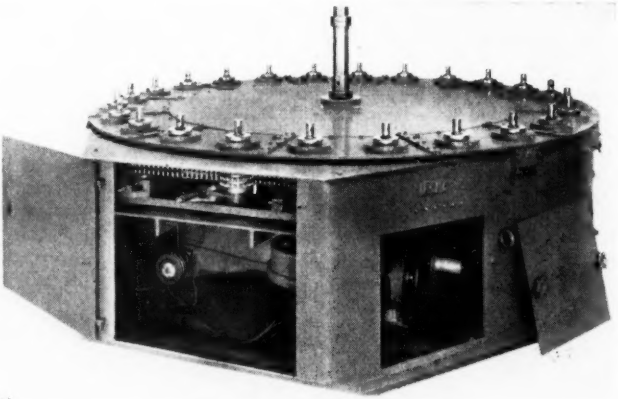
In Booths Nos. E 8-9, the Rapid Electric Co., Bronx, N. Y., will have an exhibit featuring automatic controls for plating rectifiers. Part of the display will feature an operating periodic reversing unit, illustrated herewith, with running lights to show the current paths during each portion of a PR cycle. Samples of materials finished with straight current plating and PR current plating will be shown.

Also on display will be a completely self-contained automatic programming rectifier of 250-ampere capacity. This unit is designed to carry out a complete plating schedule without attention from an operator. The rectifier has provisions for current reversal, voltage stepping, and stabilization at dwell voltage.

Acme Manufacturing Co., Detroit 20, Mich., will exhibit in Booths Nos. D 11-12-13 several automatic machines, such as the Acme 10-foot, 12-station, 24-spindle indexing machine herewith illustrated, which are descriptive of the company's general line of equipment.

One machine in particular which will be shown is the Acme 66-Inch Combination Indexing and Continuous Rotary Automatic Polishing and Buffing Machine. This unit, normally has a 66-inch diameter rotary table with a seven-station index, allowing five work stations and two stations for loading and unloading. The Combination 66-Inch Rotary will have the feature of an individual variable speed drive for revolving the table as well as individual variable speed drive for rotating the work spindles.

The index drive unit may be locked out of position and the table can then be run through the continuous table drive, having continuous revolving spindles, or the opposite can be accomplished by locking out the continuous drive unit and indexing in the normal manner. The machine will operate as a seven-station index table or may be furnished with additional spindles as a continuous Rotary in multiples of seven. When used as an index machine, it has a minimum dwell time of one second or less when indexing between stations. Models with an eight-station index table and a ten-station index table are also furnished and can be equipped with additional multiple spindles for continuous rotary operation as desired.



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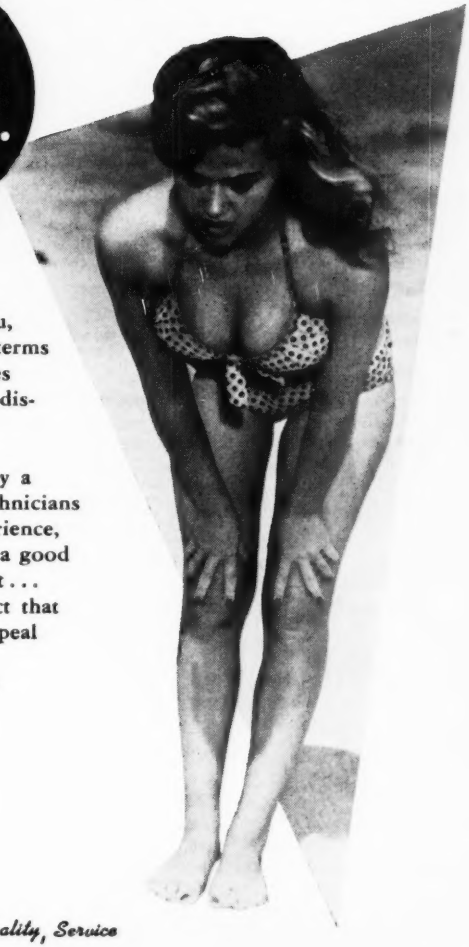

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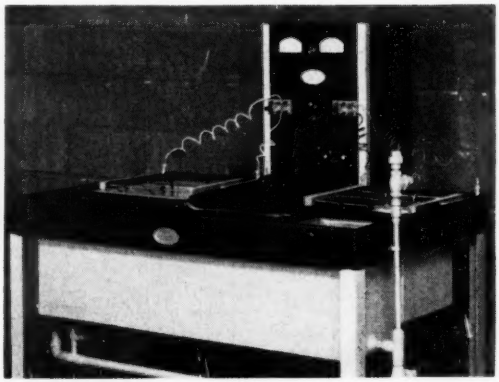
Enthone Incorporated, New Haven, Conn., will demonstrate in Booths Nos. P 7-8 an alkaline derusting process which presents a unique approach to the problem of deoxidizing steel. The accompanying illustration shows a prototype of a special demonstration unit that has been prepared for showing this process.



The derusting process, which removes rust and many types of black oxide scale at room temperature in an alkaline bath, can be applied to almost all types of iron alloys without any attack on the base metal. High polished gages, fixtures, tools, saws, gears, and bearing surfaces can be derusted to leave a bright surface. Voltage requirements range from 1 to 12 volts. A rubber or plastic-lined steel tank is recommended as the best container. An exhaust ventilation system should be provided, for hydrogen and oxygen gases are evolved.

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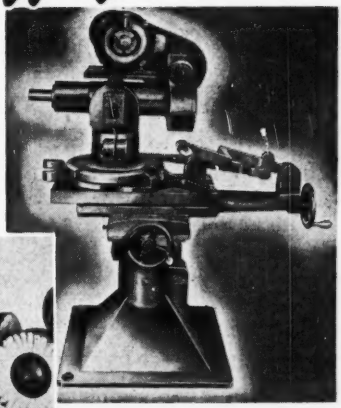

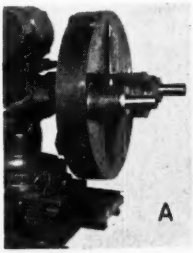

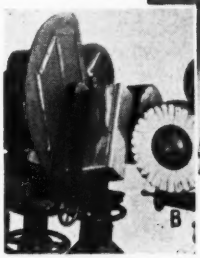

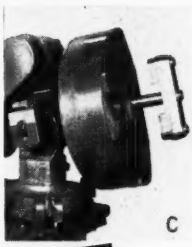

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This single spindle machine is used with the conventional lathe for finishing cylindrical parts. Toggle slide, vertical and cross slide adjustments permit quick set ups when changing jobs. Additional accessory equipment can be furnished for finishing a large variety of out of round parts

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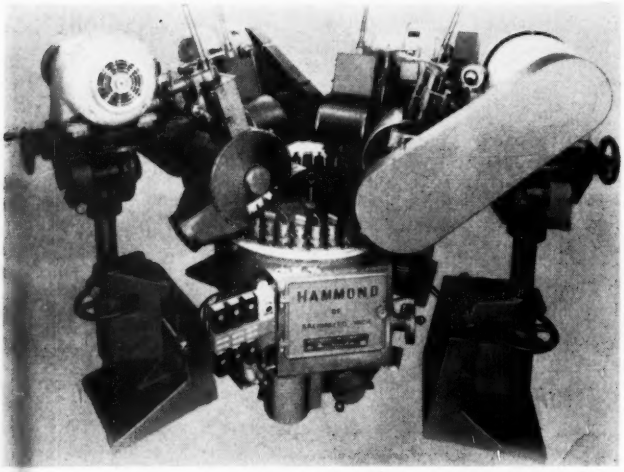

Booths Nos. B 23-24 and C 11-12 of Hammond Machinery Builders, Inc., Kalamazoo, Mich., will feature the Model C-46-40 Continuous Rotary Automatic Polishing and Buffing Machine, on exhibit for the first time. Illustrated herewith, the machine has four 15 h.p. Model 50-84 Polishing and Buffing Heads.

Also on exhibit will be the Model C-4120 Abrasive Belt Unit for converting buffing heads to polishing heads; the Model 51-94 Polishing and Buffing Head and Stand Unit, designed for both rotary and strait-line automatic buffing and polishing machines as well as for special applications; and four different styles of automatic polishing, buffing, and deburring heads for use with rotary and strait-line automatics; the Hammond Model VRO Variable Speed "Dial-Controlled" Polishing lathe, set up to buff on one side, and to polish on the other.

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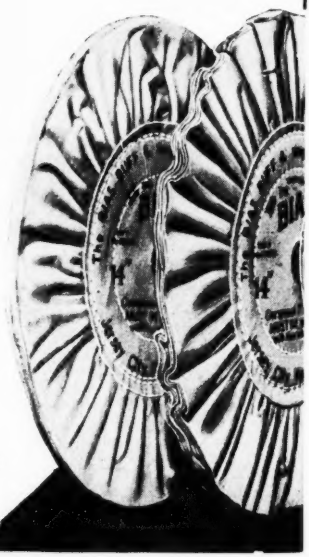
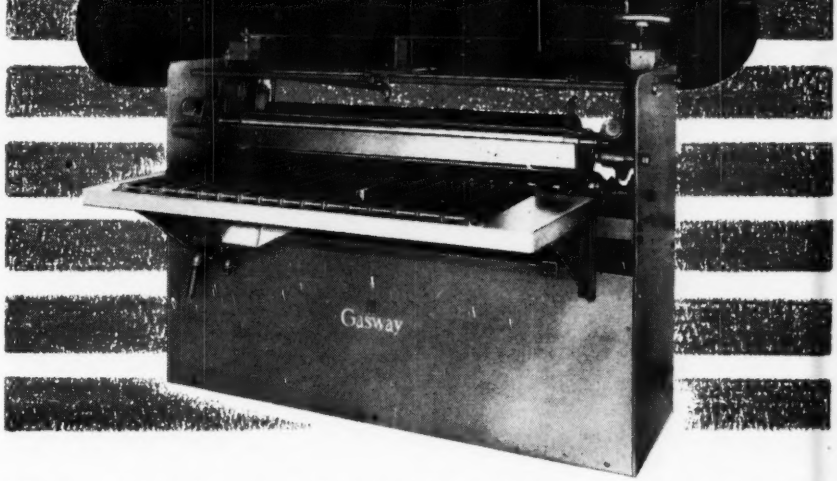
Division of RIEGEL TEXTILE CORPORATION

3464-66 Hudson Blvd. **Jersey City 7, N. J.**



Rollacoat for economy
GET FINER—FASTER FINISHING!



The benefits to be gained by using the Rollacoat method of applying finishes and protective coatings, to practically any type of flat materials, are three-fold. In the first place coating speeds are greatly increased over those of any other method and are governed largely by how fast the coated materials can be handled or dried. Secondly, the coverage per sq. ft. per gallon is usually at least 50% greater, the only loss being the paint removed from the rolls at the end of a run. In the third place you obtain finer quality of finish due to accurate control of thickness and eveness of coat.

The applications of Rollacoating are numerous. Top, bottom and sides of practically any type of flat material, whether sheet or coil stock, can be coated by a single pass through the machine.

Special equipment for cleaning, treating, coating, drying, and rewinding strip in continuous process can be constructed to special order.

GASWAY CORPORATION

Write or wire today for the 12 page Gasway illustrated book describing Rollacoat Finishers, their possibilities and limitation.

6463 N. Ravenswood Ave.
Chicago 26, Illinois

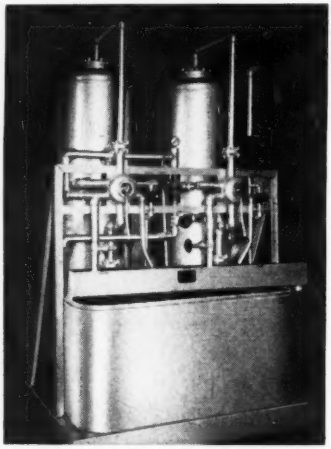
Visit us in Booth 3G at the Industrial Finishing Exposition

Metal Finishing or Plating?

DO MORE... DO IT BETTER...
AND DO IT FOR LESS
WITH

Barnstead

DEMINERALIZED WATER



2-Bed Barnstead Demineralizer, 1000 gal. per hour, used in automotive plant

In rinsing, plating, make-up, anodizing, dye-baths, where mineral-free Pure Water is needed, manufacturers can save money, have fewer rejects, and get better product control by using Barnstead Demineralizers. Write for our Free Catalog #123.

Barnstead
STILL & STERILIZER CO.
10 Lanesville Terrace, Boston 31, Mass.

In Booths Nos. P 5-6, the R. O. Hull & Co., Inc., Rocky River 16, Ohio, will exhibit a Rohco Current Tester, Hull Cell Plating Test Sets, No-Cro-Mist, forcite anode baskets, and Comet rectifiers, herewith illustrated.

The rectifier has dual outlets for 110-volt accessories, an interval timer which may be switched in or out of circuit and has a manual stop, a dual range ammeter, and an output of 0-6 amperes at 0-18 volts; 0-30 amperes at 0-15 volts. Input voltage is 110, 60 cycles.

The Harshaw Chemical Co., Cleveland 6, Ohio, will display in Booths Nos. E 10-11 all of its line of electroplating processes which include: acid tin, bright barrel nickel, bright nickel, cadmium fluoborate, copper fluoborate, lead fluoborate, and tin flouborate.

The exhibit in Booth No. P-22 of the Minnesota Mining & Manufacturing Co., St. Paul 6, Minn., will have as its focal point an operating barrel for finishing souvenir coins which will be passed out to booth visitors.

McKeon's

"Liquid Sulphur"

FOR COPPER STRIPPING NON-DANGEROUSLY

Economical, Non-Electrolytic.
No special equipment required.
Write for descriptive brochure.

Sulphur Products Co., Inc.
GREENSBURG 8, PA.

ARco
DETROIT
HOUSTON

ARCO rubber covered diaphragm plating installation, Ford Motor Co., Monroe Plant.

RUBBER COVERED UTENSILS

RUBBER LINED PIPE AND FITTINGS

RUBBER COVERED TANK GRIDS

Rubber Protected Equipment For Electroplaters

Let ARCO engineers assist you in converting to the "Diaphragm" method of plating.

• For complete details ask your jobber or write for this Diaphragm booklet.

•

Visit Our Booths C-9 & 10, Industrial Finishing Exposition—Chicago, June 16-19

IN HOUSTON
ARco RUBBER PROCESSORS
4033 HOMESTEAD ROAD
HOUSTON · TEXAS

AUTOMOTIVE RUBBER CO., INC.

8601 EPWORTH BLVD · DETROIT 4, MICHIGAN

The booth will have sample "before and after" as well as sample Honite and Super Honite Chips of different grades, Honite barrel finishing compounds and equipment. There will be attendants to show the versatility and wide application of Honite chips, compounds, and finishing equipment.

Booths Nos. S 17-18, G. S. Blakeslee and Co., Chicago 50, Ill., will feature a large liquid vapor degreasing machine which has been specially designed, and is equipped with all the company's latest features and safety devices.

In Booth C 24, the Mitchell-Bradford Chemical Co., Stratford, Conn., will display parts (illustrated) treated with Black Magic Type A, a blackening compound for steel and iron.

The low temperature, one-bath, black oxide process was developed to eliminate many of the difficulties characteristic of the present-day coatings. It is stated that Black Magic Type A will easily blacken hardened or heat-treated

pieces, will not become contaminated through the processing of copper or brazed pieces, uses less salt per gallon of solution, does not require rectification through cyanide additions, and requires only one tank and one salt.

Park No. 290

BLACKENING SALT

Black Oxide finishing for rust resistance and decorative parts. Speedy black coating in water solution with no electric current. Permanent black finish on ordnance parts, tools, aircraft, bearing races. Dazzling black decorative finish for television cameras, business machines, hardware, metal screens and machine parts. Excellent bond for paints and enamels. Simple one bath operation. Write for bulletin H-16. Park Chemical Co., 8078 Military Ave., Detroit 4, Mich.

FORM-A-ROC

FIRST-COAT FOUNDATION

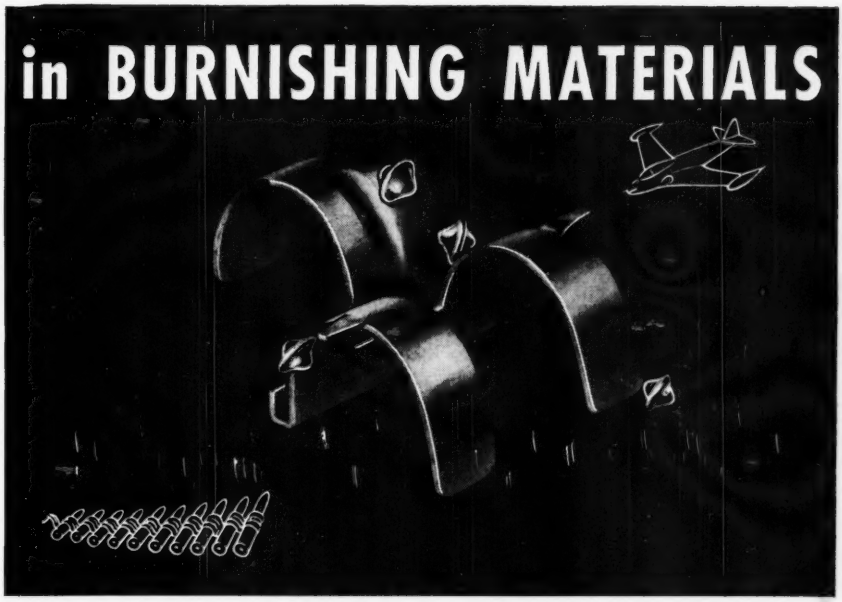
FOR FINE FINISH

1. Dries with lacquer speed.
2. Has double lacquer solids at spray gun.
3. Fills very well—sands easily.
4. Adheres tenaciously to steel, wood, presdwood, aluminum, galvanized metal, etc.
5. Holds out lacquer, synthetic or oleoresinous enamels exceptionally well.
6. Thins 3:1 with xylol.
7. Available in GREY, SALMON and OFF-WHITE.
8. Ground well to smooth texture.

The Varnish Products Company

5208 Harvard Avenue Cleveland, Ohio

in BURNISHING MATERIALS



it's the SHAPE that counts!

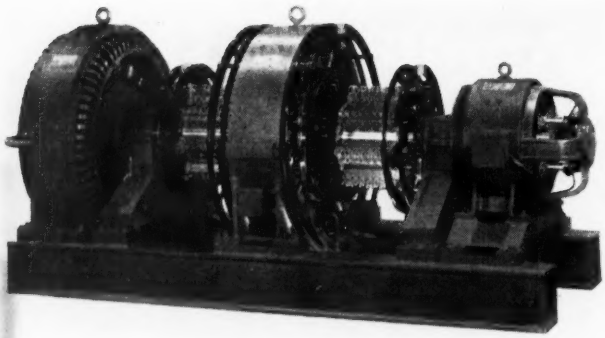
Machine gun *cartridge links* — difficult to fabricate and finish — are often de-burred and burnished to rigid government specifications with Abbott Burnishing Materials. They're *shaped* to do the job right!

Abbott Burnishing Shapes — Ball, Ovalball, Cone, Diagonal, Pin — are scientifically designed to make effective contact on metal parts, stampings and castings of any size and shape. Each is made from Abbott's famed bearing ball steel, deep hardened and polished to a mirrorlike, glass hard finish . . . to guarantee superior burnishing results.

The Abbott Method of barrel finishing has solved many industrial problems for over forty years. Perhaps it can solve yours.
Write today for Abbott Catalog-Manual.

ABBOTT
the all round ball

THE ABBOTT BALL COMPANY
1064 New Britain Ave.
Hartford 10, Conn., U.S.A.



In Booths Nos. P 9-10, The Electric Products Co., Cleveland 12, Ohio, will display a low-voltage, direct current, motor-generator similar to the one herewith illustrated. The machine has cast bronze motor brush collector rings, welded all steel construction, exclusive brazed end-ring connections, and one-piece brush holders.

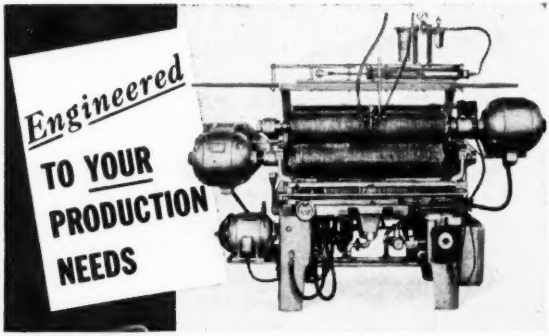
Mechanical design permits free circulation of air for cooling and allows complete accessibility to every part for inspection and maintenance. Bearings are designed so that pressure is exerted on the lubricant to force an abundant supply between bearing surfaces and requires no return holes.

In Booths Nos. S 27-28-29, United Chromium Incorporated, New York 17, N. Y., will have on exhibit finishes produced by plating, the display being highlighted by illustrations of the Unichrome Self-Regulating High Speed Chromium Plating Bath.. There will be parts showing the effectiveness of various chromium plating solutions on the fatigue strength of heat treated steel.

CLAIR

SURFACE FINISHING MACHINES

Working closely with your engineers we will develop a custom machine designed for maximum surface finishing efficiency on your particular application. Totally enclosed, abrasion-proof hydraulic circuits assure uninterrupted production and vastly reduced maintenance costs.



For Surface Finishing: screw drivers, chisels, pliers, saws, wrenches, compacts, cigarette cases, fine silver, surgical instruments, fan blades, flat iron sole plates, many other similar items.

CLAIR MANUFACTURING CO., INC.

Specialized Machine Equipment For Glazing and Polishing Operations

OLEAN, N. Y.

Battery of Paint Baking Ovens.
A-Type Continuous Paint Baking Oven.
Continuous Dry-Off Oven.
LANLY
FINISHING OVENS
THE LANLY COMPANY • 770 PROSPECT AVE
CLEVELAND, OHIO
Continuous Monorail Oven with Air Seals.
LANLY Specialized engineers are daily consulting with progressive manufacturers and meeting the need for high grade, uniform, finishing oven production at satisfactory volumes.
Continued repeat orders vouch for LANLY competence.
Complete information and literature supplied upon request.
Batch-Type Oven.
Lay-Down Porcelain Enamel Dryer.
Multiple-pass Finishing Oven.

Glove Dollars Wisely Invested

Boost Your Profits

PIONEER®

Stanzoils

Fully protected by the *right* glove for the job, your workers work better and faster. It pays in higher production and profits. You lose money trying to fit one or two kinds of gloves to every job in your plant. PIONEER'S new Stanzoil catalog shows you how to buy the *right* glove for each operation.

N-71 heavy-weight all-neoprene, 18" length. For hand and arm protection.

Unbiased advice — Stanzoils include all kinds of liquidtight gloves: all-neoprene, neoprene and vinyl-coated, 32 styles, weights, sizes. Make your glove dollars pay a dividend — write today for this Stanzoil catalog!

Industrial Products Division

The PIONEER Rubber Co.
685 Tiffin Road, Willard, Ohio

STANZOIL PIONEER

OVER 30 Years OF QUALITY GLOVE MAKING

P.S. If your glove problems are unusual because of the nature of your product finishing operations, PIONEER welcomes the opportunity to help you solve them. Write us about your needs and problems — you'll save money, improve your glove service.

Other samples will illustrate the differences in plating speed and plating smoothness.

Not only plated finishes but also wholly chemically produced finishes, as well as combination finishes, will be shown, Some of the products that visitors will be able to see are Tantalum heating and cooling coils, chromium plating anodes, and selenium rectifiers.

Detrex Corp., Detroit 32, Mich., will have on exhibit in Booth S 1 a working demonstration of Vincote, a vinyl paint spray booth compound. This material, it is stated, features simple spray gun application and easy maintenance, for all overspray paint is merely peeled off in large easy-to-remove sheets.

The company will also exhibit Extrudite, a modern process used in cold-forming steel. On display will also be the complete line of Detrex specialized alkali and emulsion cleaning materials, each of which is designed for specific metal cleaning requirements.

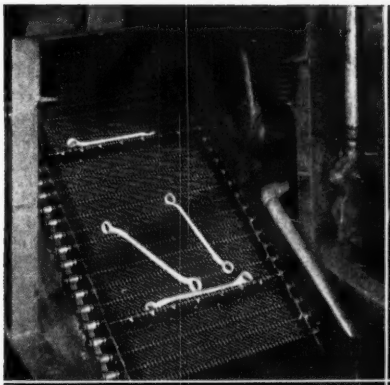
In Booth No. G-4, the J. J. Siefen Co., Detroit 9, Mich., will have an exhibit featuring its S9503 spray gun, TVC500 time valve, and VA512 cam valve.

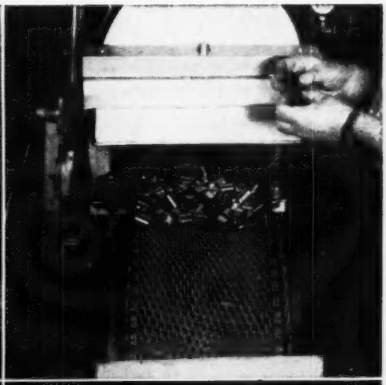
The spray gun is of particular interest since it is twice as large and made of Plexiglas, thus allowing visitors to see the inner workings.

Allied Research Products, Inc., Baltimore 5, Md., will feature in Booth Nos. S 19-20 its complete line of Iridite finishes for zinc, cadmium, aluminum, copper, brass and bronze, and ARP Plating Chemicals.

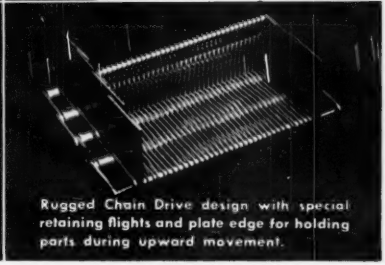
The Allied exhibit will include both photographic and schematic illustrations showing how the Iridite coatings provide protection from corrosion, paint adherence, and decorative finishes. In addition, many actual samples of various parts and metals finished with Iridite will be on display.

Frederic B. Stevens, Inc., Detroit 16, Mich., will exhibit the Stevens Full Automatic Barrel Plating and Processing Machine in Booths Nos. P 25-31 and Q 1-10.





COMBINE
movement with processing
REDUCE
rejects and handling costs



Rugged Chain Drive design with special retaining flights and plate edge for holding parts during upward movement.

with a Cambridge Woven Wire Conveyor Belt

Regardless of the type or size of part, or of hot, wet or corrosive processes . . . a Cambridge belt can help you reduce rejects and handling costs by continuously conveying your product through the process medium at a controlled rate of production.

Open mesh of the belt allows immediate drainage of process solutions or complete circulation of hot air or gases. Special alloy wire for wear resistance means long belt life, low ultimate cost.

Want to know more? Just call in your Cambridge field engineer. He'll be glad to work with you to select the best belts for your plant. Write direct or see "Belting-Mechanical" in your telephone directory.

FREE BELT MANUAL!
describes Cambridge weaves, gives conveyor design and useful metallurgical data.

The Cambridge Wire Cloth Co.
Dept. A • Cambridge 6, Md.

WIRE CLOTH | METAL CONVEYOR BELTS | SPECIAL METAL FABRICATIONS

OFFICES IN PRINCIPAL INDUSTRIAL CITIES

The full automatic to be featured at the show measures approximately 48 feet long by 12 feet wide when installed with the special automatic loading equipment also to be featured. Because of its built-in unloading feature, the addition of the automatic loader, herewith illustrated, makes the Stevens automatic barrel processing machine capable of becoming a component part of any modern materials handling system for plating and/or processing small parts while cutting costs and increasing production in any plant.

The Stevens motion picture, "Industrial Album," will also be shown to interested A.E.S. Convention visitors who visit the Stevens suite at convention headquarters.

South Florida Test Service, Miami 34, Fla., will have in Booth S-25 an exhibit designed to acquaint men in the Products Finishing field with the facilities and scope of service the company offers.

Particular stress will be placed on instrumentation for measuring and recording environmental conditions during all test periods. The advantages of Southern Florida for rapid predetermination of permanency and durability will be pointed out.

Four locations which the company has in Florida are the main inland proving grounds

For Quality and Uniformity Specify

HARRISON 4A PRODUCTS

STAINLESS STEEL BUFFING AND POLISHING COMPOUNDS

Faster Cutting—Increased Production —Economy

Glazing Compounds
Compounds for Spraying Or Dipping

Use 4A Cement and Thinner—For Setting Up Wheels, Belts, Rolls, etc. — Longer Life — Greater Production.

Consult Us On Any of Your Problems. We'll Gladly Advise and Send Samples.

HARRISON & CO., INC.
Haverhill, Mass.

No. 150 SpeedWay SpeedSander

$34.50

MOTOR-DRIVEN 3/16" Orbital-Motion

Sands, Rubs, Polishes . . . for Dry or Wet Finishing

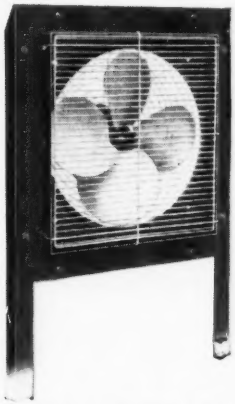
Powerful, direct-connected (no gears), 3450 r.p.m., 100-120 v AC air-cooled motor. All sealed ball-bearing construction. Die-cast aluminum housing, polished. All-position handles. In hand weight only 5 lbs. Insulated with ground wire for wet as well as dry sanding or rubbing. Available accessories—deep contour pads, surface plates, felts, etc. Takes any sheet abrasives—3 covers 4½" x 6½" from standard 9" x 11" sheet.

A time saving quality tool priced so every worker can have one.

Write for Circular

SpeedWay MANUFACTURING CO.
1895 So. 52nd Ave., Cicero 50, Ill.

Two fan sizes: 18 inch and 24 inch, capacities from 2000 cfm to 6400 cfm. Overall height 55½ inches.



nyb

PEDESTAL FAN

(Industrial Type)

Available for Prompt Shipment From Stock

Place this versatile fan in the most effective spot to deliver a gentle breeze or a brisk wind for a variety of uses. Safety guards front and rear with totally enclosed motors to meet State Industrial Safety Code Requirements. Bolted construction simplifies shipment, assembly and storage.

Write for Bulletins

FANS • BLOWERS • UNIT HEATERS • MAKE-UP AIR UNITS • HEAVY DUTY HEAT SURFACE

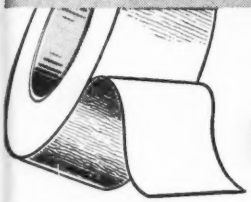
nyb **THE NEW YORK BLOWER COMPANY**

SALES OFFICES • 32nd STREET and SHIELDS AVENUE • CHICAGO 16

FACTORY, LAPORTE, INDIANA

SEAMLESS PRESENTS

The Fastest-Sticking Masking Tape Available—



SR 660 F.O.S.

Controlled tests prove SR-660 F.O.S. Paper Masking Tape sticks 50-100% faster than leading competitive brands!

SR-660 F.O.S. Paper Masking Tape sticks to a surface, on contact. It is without comparison. Strong, tenacious, easy to apply, it is thin, workable, with high non-staining characteristics. There's nothing like it!

For authoritative advice on industrial tape problems, for samples, prices, catalogues, write Seamless—the originators of pressure-sensitive industrial tape.

FINEST QUALITY SINCE 1877

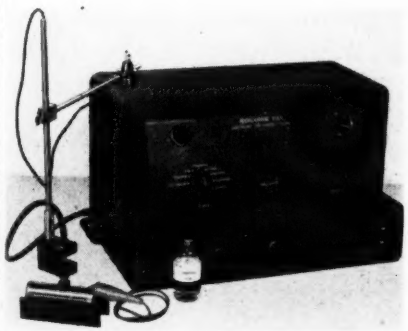
1877 75th Anniversary 1952

INDUSTRIAL TAPE DIVISION
THE SEAMLESS RUBBER COMPANY
NEW HAVEN 3, CONN., U. S. A.

and laboratory, a salt atmospheric location 175 feet from the ocean, a tidewater location for alternate sea water immersion, and a station for total immersion in sea water.

A new product to be shown in booth No. Q 26 of Kocour Co., Chicago, Ill. is the Kocour Electronic Thickness Tester, illustrated herewith, for measuring the thickness of electrodeposited metallic coatings. The instrument measures the thickness of chromium, silver, tin, cadmium, zinc, copper, and nickel deposits on various base metals with an average accuracy of 90-95 per cent, it is stated.

The standard model is limited to a minimum thickness of 5 hundred-thousandths of an inch; the maximum thickness which can be tested is indefinite, although deposits over 2 thousandths of an inch have been tested. Thickness of the deposit is read directly from the instrument panel on completion of the test.



DUST AND FUME CONTROL
YOU'LL WANT THIS BROCHURE!
COLLECTING DUST AND FUMES IN THE FOUNDRY
Uses 5 Great YOUNG & BERTKE Systems of
DUST AND FUME CONTROL
IN THE MANUFACTURE OF VALVES

YOUNG & BERTKE

DUST AND FUME CONTROL SYSTEMS FOR YOUR INDUSTRY

Join the Long List of Nationally Known Manufacturers represented in this pictorial Brochure—users of Young & Bertke Dust and Fume Control Systems.

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THE YOUNG & BERTKE CO.
2291 BUCK STREET
CINCINNATI, OHIO

NAME .....
TITLE .....
COMPANY .....
STREET .....
CITY ..... ZONE ..... STATE .....

The YOUNG & BERTKE Co.
DUST and FUME CONTROL • OVENS • SPRAY BOOTHS
2291 BUCK ST. • CINCINNATI (14), OHIO

The instrument operates on the coulometric principle of measuring the time required to dissolve the deposit anodically from a known area at a constant current-density. The endpoint of the test is characterized by a sharp voltage change which is amplified to stop the test.

Two accessories that have been developed for direct use with this tester are a scale-changing unit which permits direct reading of deposit thickness in millionths of an inch, and a unit that permits measurement of plating thicknesses on wire. Silver and tin deposits on copper wire and copper deposits on steel wire have been tested over a range of wire gauge.

An improved model of a coating machine, will be exhibited by the Gasway Corp., Chicago, Ill., in Booth G 3. The background of the booth will carry a series of "on-the-job" photos of coating installations for metal strip in continuous coils.

The coater is built in one standard model to which various accessories, such as feed and delivery conveyors, feed rollers, and paint delivery pumps, can be added. Applicable to a completely automatic finishing line, the machine has numerous adjustments for accurate control of coating thickness and other mechanical features to allow steady high speed production.

In Booths Nos. P 3-4, Roto-Finish Co., Kalamazoo, Mich., will display its latest machine developments: the DW 45-36-2, DW 16-16-2, and the DW 30-36-1SF.

The DW 30-36-1SF, is a specially designed machine to finish disc-type circular parts. The machine uses the directional flow of the finishing media to uniformly and efficiently produce the desired results. It has a single 30½ x 35¼-inch I.D. rubber-lined compartment with an 18-cubic foot capacity. Patented quick action cam locks, used for closing the large compartment door, have spring-loaded pressure releases which prevent excessive pressure build-up in the processing compartment.

Machines are designed to use the precision tumbling processes originated by the Roto-Finish Company. These processes are used to deburr, descale, polish and color all types, shapes, and sizes of metal parts, which will be displayed.

SOUTH FLORIDA TEST SERVICE

- *TESTING*
- *INSPECTION*
- *RESEARCH*
- *ENGINEERS*

Consultants and specialists in corrosion, weathering and sunlight testing.

Visit Our Booth

No. S-25

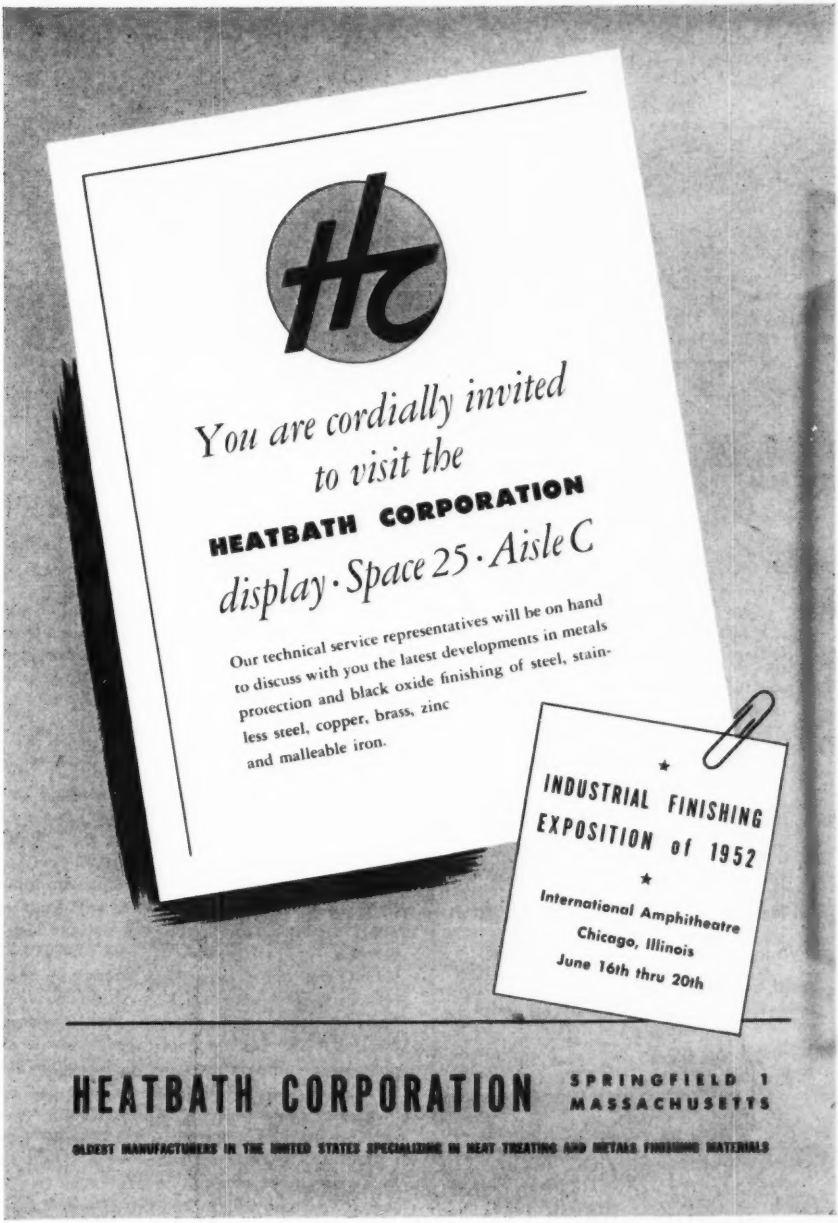
4201 N. W. 7TH STREET
MIAMI 34, FLORIDA

In booth No. D 18, the Standard Electrical Tool Co., Cincinnati, Ohio, will exhibit several lathes that are used for polishing and finishing household pots and pans, molding for automobiles, furniture and other products.

The company announced that all exhibited lathes are used in present day defense plants for tanks, radar, and jet engine parts.

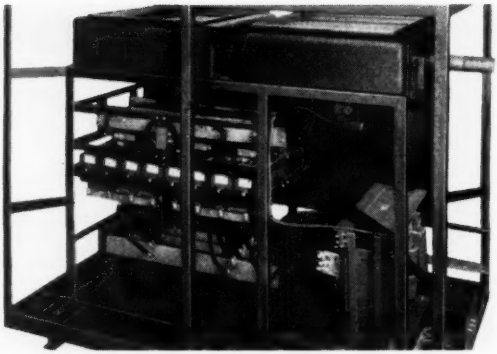
In booth No. R 20-21, The Lea Manufacturing Co., Waterbury 20, Conn., will set a new record by exhibiting 19 new products, many of which will furnish the metal finishing industry with the latest methods to attain finishes required by government and consumer demand.

The firm has developed these 19 products since they last exhibited at an AES Exposition. All together, Lea Mfg. Company will exhibit 29 new and old products.


You are cordially invited
to visit the
HEATBATH CORPORATION
display · Space 25 · Aisle C
Our technical service representatives will be on hand to discuss with you the latest developments in metals protection and black oxide finishing of steel, stainless steel, copper, brass, zinc and malleable iron.
INDUSTRIAL FINISHING EXPOSITION of 1952
International Amphitheatre
Chicago, Illinois
June 16th thru 20th
HEATBATH CORPORATION
SPRINGFIELD 1
MASSACHUSETTS
OLDEST MANUFACTURERS IN THE UNITED STATES SPECIALIZING IN HEAT TREATING AND METALS FINISHING MATERIALS

In Booths Nos. E 32-33 the Richardson-Allen Corporation, manufacturing affiliate of Wesley Block & Co., Flushing, N. Y., will exhibit selenium rectifiers, as illustrated, and other equipment for extremely accurate control of voltages and current.

Since the rectifiers are of unique design in that they employ heat exchangers, operation at high ambient temperatures, under abnormally heavy loads, and in corrosive atmosphere, is possible without endangering the life of the selenium stacks, it is stated.



In Booths Nos. C 9-10, the Automotive Rubber Co., Inc., Detroit 4, Mich., will display parts that are rubber coated for the finishing industry. Partitions for diaphragm plating systems, dipping baskets, ventilation ducts and pipes, and pipe fittings will be featured.

Special emphasis, by means of models, illustrations, and literature will be placed on diaphragming, a method by which anode bags are eliminated without detriment to bath purity.

A radiant electric panel for infrared ovens which produces infrared radiation in the far infrared range will be exhibited by Edwin L. Wiegand Company, Pittsburgh 8, Pa., in special island "D".

The company states that the new panel enables industrial plants to have an infrared oven in days, instead of months. Ovens constructed from these new panels are used for baking paint or other finishes on all types of products.

FOR POSITIVE BLACKENING OF STEEL AND IRON PARTS . . .

USE SWIFT BLACK!

Specially compounded to assure faster, richer, more uniform blackening.

FOR EFFICIENT METAL CLEANING . . .

USE SWIFT METAL CLEANING COMPOUNDS!

Superb alkali soak cleaners for ideal results on specific applications.

FOR CERTAIN RUST PREVENTION . . .

USE SWIFT RUST RESISTING COMPOUNDS!

Complete, lasting protection for ferrous and non-ferrous alloys.

Swift welcomes any opportunity to solve industrial chemical problems — write or phone for Swift action.

Send TODAY for descriptive literature on metal treating and finishing compounds.

Swift
INDUSTRIAL CHEMICAL CO.
CANTON CONNECTICUT

Topper Equipment Co., Matawan, N. J., will exhibit in Booth No. D-25 its new and improved Circo Hot Vapor Degreaser. Known as Model SC-44 and Model SC-92, the machine is complete with stainless clad steel wall construction and automatic controls. It features solvent reservoirs with built-in water separators and constant solvent level controls. The unit reclaims its own solvent automatically, and has a large clean-out door for easy maintenance. A packless flushing pump with hose makes flushing and spraying of solvent a simple procedure in the removal of dirt deposits. Safety thermostats are adjustable for use of the unit with perchlorethylene or trichlorethylene solvents. An insulated heat chamber provides maximum retention of heat in the solvent cleaning cycle. Models require little floor space and can be heated by steam, gas, or electricity.

"LIQUID ENVELOPE"

PEELABLE SPRAY-BOOTH COATING

THE FIRE-SAFE—LABOR-SAVING METHOD THAT ELIMINATES HEAVY OVER-TIME FOR SCRAPE DOWNS

You'll never know how simple and easy . . . and inexpensive . . . it is to peel-off all accumulated overspray until you use "LIQUID ENVELOPE", the original and still the most satisfactory "strip coating". Why not order a 5 gallon can at the drum-lot price today?

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Aviation Lubricants Co., San Diego, Calif.
General Spray Equipment Co., Boston, Mass.
Bay State Spray Equipment Co., Springfield, Mass.
Lea Manufacturing Co., Waterbury, Conn.
Edgcomb Steel of New England, Milford, Conn.
Kellermann Paint Co., New York, New York
Grapek Paint Co., Newark, N. J.
H. J. Gettemuller Co., Inc., Baltimore, Md.
R. W. Renton Co., Cleveland, Ohio, Indianapolis, Ind.
Supplee-Biddle-Steltz Company, Philadelphia, Pa.
Dean & Barry Co., Columbus, Ohio
Vic Miner Co., Toledo, Ohio
Abrasive & Supply Co., Detroit, Mich.
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Metal Goods Corp., St. Louis and North Kansas City, Mo.; Dallas and Houston, Texas; Denver, Colo.; New Orleans, La.; Tulsa, Oklahoma.
Hubbard & Stau, Los Angeles, Calif.
The Plastic Paper Co., Los Angeles, Calif.
C & H Supply Co., Seattle, Wash.
Hugh Russel & Sons, Ltd., Montreal and Toronto, Canada

NEWS of the Industry

COMPANIES

J. HOLLAND & SONS, INC., manufacturer and distributor of metal finishing equipment, Brooklyn, N. Y., announces that it will expand plant facilities in a new, ultra-modern, three-floor building at 45 Johnson Ave., Brooklyn, a short distance from the present plant.

The new building, designed by Saul Goldsmith, Brooklyn engineer and architect, will provide 60,000 square feet of space to house additional factory equipment and executive offices. According to Charles Holland, president, the new plant is expected to be ready for occupancy within a few months.

Inauguration of a service plan, hailed as a "first" in the spray finishing industry, is being announced by the **DeVILBISS COMPANY**, manufacturer of spray finishing systems. Known as the Rebuilt Exchange Program, it makes DeVilbiss rebuilt exchange equipment available for immediate delivery to users having DeVilbiss products for rebuilding.

Every authorized DeVilbiss sales outlet and factory branch in the United States will offer this exchange service, according to Howard P. DeVilbiss, president, and rapid service will be backed up by six factory rebuilding centers.

In inaugurating the program, which has been in development for almost two years, DeVilbiss will limit exchanges to its most widely used spray guns, Types P-MBC and MBC-510, and its complete line of air compressors. As rebuilding facilities are expanded; other equipment will be included.

THE AVIATION - INDUSTRIAL CHEMICALS DIVISION of **FINE ORGANICS, INC.** announces the appointment of Canadian Hanson & Van Winkle Company, Limited, as sales representative and distributor in Canada. Both the aviation and industrial lines of maintenance and overhaul chemical cleaners and safety solvents will be carried.

Canadian Hanson & Van Winkle Company, Limited, has its head office and plant in Toronto, its own warehouse in Montreal, resident representatves in Hamilton, Chatham, and jobber representation in Vancouver, B. C.

NEW POSITIONS

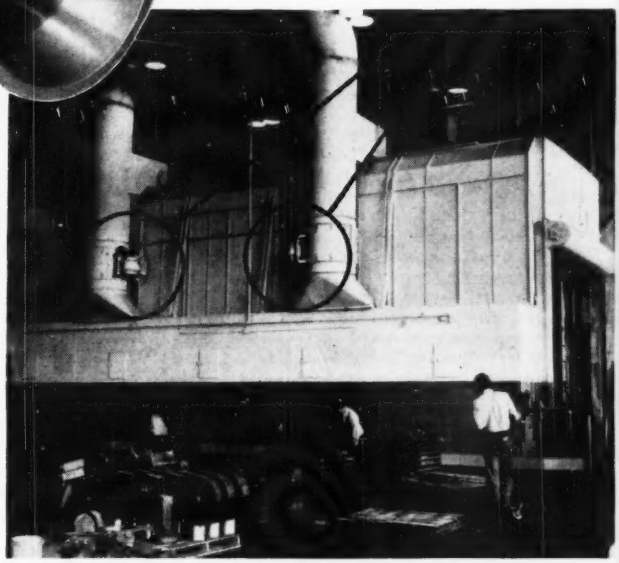
The appointment of **R. W. PFLUG** to the post of Coordinator of Inquiries for the Industrial Sales Division was announced by W. F. Newbery, director of sales for the Detrex Corp., Detroit 32, Michigan.

This new position will provide an efficient liaison between the company's field representatives and the engineering department. Mr Pflug's 15 years of experience with Detrex in the sale and service of all types of industrial metal cleaning equipment will greatly increase the speed and effectiveness with which each customer inquiry can be processed.

Appointment of three general managers to head tape divisions of Minnesota Mining & Manufacturing Company was announced recently by Louis F. Weyand, executive vice president in charge of tape.

C. C. SMITH, former general sales manager of the tape division, was named to

Thorough Paint Spray Exhaust by 2 Duct-Size "Buffalo" VANEAXIAL FANS



This Mahon Hydro-Filter Spray Booth in the Euclid Road Machinery Company's Cleveland plant accommodates large units of road building machinery and special vehicles. And two duct-size "Buffalo" Vaneaxial Fans do the exhaust job efficiently, quietly and with little attention. Fitting in like a piece of duct, these fans waste no space and are economical to install. Motors in these models are mounted outside, away from the air stream.

There is a "Buffalo" Fan ready to solve *your* problem. Why not write today for details?

First For Fans

BUFFALO FORGE COMPANY

190 MORTIMER ST. BUFFALO, NEW YORK

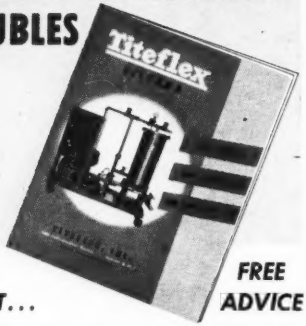
PUBLISHERS OF "FAN ENGINEERING" HANDBOOK

Canadian Blower & Forge Co., Ltd., Kitchener, Ont.

Sales Representatives in all Principal Cities

VENTILATING AIR CLEANING AIR TEMPERING INDUCED DRAFT EXHAUSTING
FORCED DRAFT COOLING HEATING PRESSURE BLOWING

REDUCE FILTRATION TROUBLES



FREE BOOKLET... **FREE ADVICE**

If you need a new or another filter, but are wondering about filter costs, operation, and suitability for your purpose, you have two good friends—your Titeflex Engineer and the Titeflex Filter Booklet.

The Filter Booklet will show you how Titeflex Filters are constructed and how they work.

Your Titeflex Engineer will set you straight on costs and equipment for your special needs. He's the right man to have around if you are having filtration troubles now.

Don't let any thought of obligation to us delay mailing of the coupon below today. We are low-pressure, service-minded engineers, not high-pressure promoters.

Businesses served by Titeflex Filters include...

Chemical	Wine	Water
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☐ Please send me a copy of your Free Booklet about Titeflex Filters.

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COMPANY_____

ADDRESS_____

CITY_____ ZONE____ STATE_____

head the cellophane tape division.

WILLIAM E. ZIMMERMAN was made general manager of the industrial tapes division and **BERNARD W. LUECK** was named general manager of the masking tapes division.

Henry M. Kidd

Appointment of **HENRY M. KIDD** as vice president and sales manager of the DeVilbiss Company spray painting equipment division, was announced by Howard P. DeVilbiss, president.

Mr. Kidd has been associated with DeVilbiss for more than 18 years. When he joined the company, he entered a sales training course. After this indoctrination, he became a sales correspondent and rapidly rose in this division, being named assistant sales manager in 1944.

meetings

OF INTEREST TO FINISHERS

June 23-27. 50th Anniversary, American Society for Testing Materials, Hotels Statler and New Yorker, New York, N. Y.

Sept. 10-12. 14th Annual Shop Practice Forum, Porcelain Enamel Institute, University of Illinois, Urbana, Illinois.

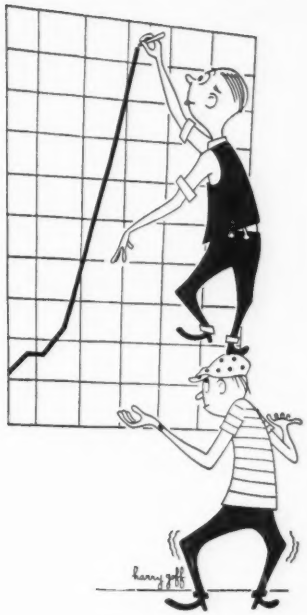
Oct. 22-24. 21st Annual Meeting, Porcelain Enamel Institute, Greenbrier Hotel, White Sulphur Springs, West Virginia.

Nov. 17-19. 64th Annual Convention, National Paint, Varnish and Lacquer Association, Palmer House, Chicago, Ill.

Nov. 18-22. 17th Annual Paint Industries' Show, Palmer House, Chicago, Illinois.

Nov. 20-22. 30th Annual Meeting, Federation of Paint and Varnish Production Clubs, Palmer House, Chicago, Illinois.

They're reaching a new production record!



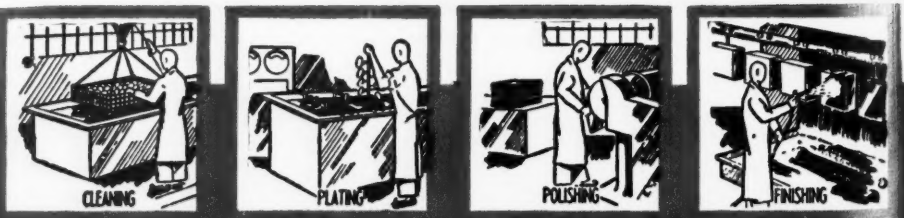
SIMONDS ABRASIVE CO.

Abrasive Grain

Production moved up, polishing costs moved down when the right abrasive grain moved in. Simonds Abrasive Company Borolon grain, of course—right for all *your* polishing jobs—and part of a complete line of grinding wheels of all shapes and sizes, mounted wheels and points, segments and abrasive grain . . . all manufactured under complete quality control by Simonds Abrasive Company, a major producer of grinding wheels for almost 60 years. Write for Bulletin ESA 198, which describes various types of Borolon Grain. Also request name of your nearest distributor.

SIMONDS ABRASIVE CO., PHILADELPHIA 37, PA. BRANCH WAREHOUSES: CHICAGO, DETROIT, BOSTON
DISTRIBUTORS IN PRINCIPAL CITIES

Division of Simonds Saw and Steel Co., Fitchburg, Mass. Other Simonds Companies: Simonds Steel Mills, Lockport, N. Y., Simonds Canada Saw Co., Ltd., Montreal, Que. and Simonds Canada Abrasive Co., Ltd., Arvida, Que.

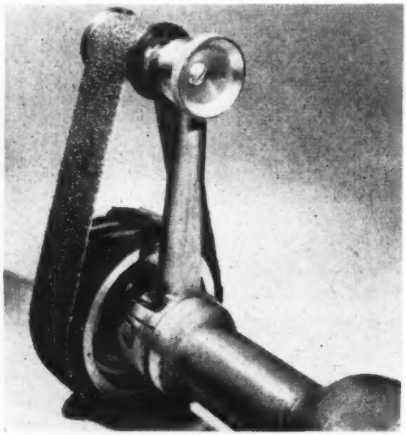


New • EQUIPMENT • MATERIALS • PROCESSES

Belt Grinding Attachment

The introduction of an attachment which permits the use of abrasive belts on straight spindle air and electric portable tools has been announced jointly by The Carborundum Company, Niagara Falls, N. Y., and Buckeye Tool Corp., Dayton, Ohio. The new belt grinding attachment offers the possibility of a completely new range of applications for the versatile portable tool, the manufacturers state.

The attachment, made from lightweight aluminum castings, consists of an idler pulley, the supporting mechanism, and a contact wheel; the latter being mounted on the tool spindle. The contact wheel is a small-sized version of the serrated "61" wheel by Carborundum.



Belt Grinding Attachment

The unit is attached by a split bracket to the casing of the tool where grinding wheel guards are normally mounted. This bracket makes the attachment adaptable to almost any portable tool of the proper speed and type, the two companies claim.

In extensive field tests of the two models now available (using a Buckeye 'C" Series horizontal grinder with a 2 by 1 inch contact wheel and a Buckeye "D" Series grinder with a 4 by 2 wheel), the tools delivered constant spindle speeds of 15,000 r.p.m. and 9,000 r.p.m. respectively. Initial belt sizes for these two models are 12 by 1 inch and 20 by 2 inches. A wide variety of grit sizes and backings may be used.

Coating for Polystyrene

Development of Styrophane, an organic coating for polystyrene, designed to withstand high humidity, has been announced by Standard-Toch Chemicals, Inc., 2600 Richmond Terrace, Staten Island 3, N. Y. The product is expected to find its most significant use as a decorative coating for refrigerators with interior color trim, and other household appliances.

Styrophane may be applied by spray to injection molded polystyrene parts, using standard spray equipment. The manufacturer states that it has excellent wetting characteristics, and good flow.

The film resists chipping, cracking, and abrasion, the manufacturer claims, and

Every Man, Woman and Child in the U.S.A. Can Go Riding at the Same Time

IN the U. S. A., competition is basically responsible for better cars at lower comparative cost. We enjoy the use of three times as many cars—and annually produce four times as many cars—as the rest of the world put together. There are approximately 43 million autos—and 9 million trucks and buses—in use in the U. S. A. today . . . more than enough to take everyone riding at the same time.

By stimulating the sale of the new and the resale of the old, our competitive system achieves widespread ownership of automobiles, as with almost everything else. In most foreign countries, out of necessity people make things last as long as possible. In the U. S. A., vigorous competition prompts continuous progress. Buyers of new cars get maximum value, because each manufacturer competes actively for the new-car dollar. Lowest-income groups benefit by the lowered prices of used, yet essentially useful, products. Overall result: The world's highest standard of living. In most of the rest of the world, only the rich enjoy luxuries. In the U. S. A., the irresistible drive of competition places most of the miraculous products of modern living within reach of all.

Free competition—like freedom of speech, press and religion—is a dynamic part of Uncle Sam's character. Let's keep it free, so that the U. S. A. continues to be the greatest country in the world.

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THE COMPETITIVE SYSTEM DELIVERS THE MOST TO THE GREATEST NUMBER OF PEOPLE

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IN MANY SHAPES
and
10 DENSITIES
FOR YOUR FINISHING
NEEDS

A Extra Soft—for polishing tin, glass, and instrument hands
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E Rock Hard—for polishing steels, plastics, leather

Also made in A+, extra soft+
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C+, medium+
D+, hard+
E+, rock hard+

LET US HELP YOU WITH
YOUR BUFFING PROBLEMS

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is also resistant to household soaps, detergents, fats, oils, and grease. It is available in a clear coating, a bronzing vehicle, pastel tints, and metallic colors.

PRODUCT LITERATURE

Roberts Finishing Compounds. The Roberts Rouge Co., Stratford, Conn., has issued an attractive illustrated brochure to commemorate its seventieth year in the manufacture of finishing compounds. Products today include all practical abrasives for every type of finish on metal, plastic, or wood. The brochure tells the history of the company, lists many of its products, and describes some of the compounds in detail.

"Diaphragm Plating Simplified" is the title of a 12-page booklet available from the Automotive Rubber Co., Inc., 8601 Epworth Blvd., Detroit 4, Mich. Well illustrated with photographs of actual installations and diaphragm assemblies, the booklet defines diaphragming and relates its applications and how it works.

Five-Way Savings in Pickling. The International Nickel Co., Inc., 67 Wall St., New York 5, N. Y., now has available an eight-page catalog on the uses of Monel pickling equipment.

Profusely illustrated and printed in color, the catalog lists and explains the five major savings in pickling realized through the use of Monel equipment. Illustrations show the type of equipment available and its use in installations.

"Backstand-Belt Polishing" is the title of an eight-page catalog available from the Coated Abrasives Div., Armour & Co., North Benton Rd., Alliance, Ohio. Illustrated and colored, the bulletin presents case histories of firms using backstand belt methods and shows the different ways of using the backstand. There is also a section which lists and discusses the advantages of this type of polishing.

Scratch Brushes. Now available from Dixon and Rippel, Inc., Dept. P, 479 Hasbrouck Ave., Kingston, N. Y., is a 20-page catalog which features the company's complete line of power and hand brushes made of wire, bristle, Tampico and fiber.

All standard brushes and also special types, are tabulated as to specifications.

The Finishing Touch — **By J. A. Patterson**

"When he looked at me like I didn't know what I was doing---I looked at him like I did!"

Opportunity Section

Manufacturers' Agent with engineering background wanted to contact distributors, jobbers, mill supply or industrial distributors. Nationally known specialized anti-corrosive coatings sold through distributors only. Give full details, territory covered, etc., in first letter. Will arrange personal interview.

RUST-SELE COMPANY
9808 Meech Avenue Cleveland 5, Ohio

Excellent position vacancy—laboratory—group leader for synthetic enamel and clear formulations for industrial coatings end use. Experience required. Positions for chemists and formulators are also open. Reply to J. Holle, Finishes Division, Interchemical Corporation, 1754 Dana Avenue, Cincinnati 7, Ohio, giving complete qualifications including salary requirements.

FOR SALE

Two paint spray booths, used but good condition, 72" wide x 84" deep, 72" wide x 72" deep, both 7 ft. high. Two JH DeVilbiss fans, six vapor-proof lights, one Westinghouse motor, 1½ h.p., 220V, 3 phase, 60 cycle, equipped for belt drive, $500.00 for lot or will sell separately. Box No. 62, c/o PRODUCTS FINISHING, 431 Main Street, Cincinnati 2, Ohio.

Paint Salesman—Specialist in product finishes. Wanted by Company with top line of well established production finishes. Interesting proposition to right man. Write stating full details including experience in this field. Box No. 61, c/o PRODUCTS FINISHING, 431 Main St., Cincinnati 2, Ohio.

May We Suggest

TO help you get the most out of your attendance at the Convention and Exposition; to make things easier, both for yourself and the many committees serving you; to make your visit to Chicago a most profitable and enjoyable one, may we offer the following suggestions:

Check the convention program over in advance so you can budget your time.

Be on time at those functions you plan to attend.

Make notes on what you hear and see.

Balance your time between technical papers and sales contacts.

Take part in questions and answer sessions. Talk shop when the opportunity arises.

As is the case with so many other things in this world, you will get help out of this convention in proportion to the amount of time you put into it.

PRODUCTS FINISHING stands ready to help you at all times. We extend a cordial invitation to visit our booth, No. Q 25. The following members of our organization will be on hand to greet you:

Richard S. Kline	Monday, Tuesday—June 16, 17
John M. Krings	Monday through Thursday—June 16, 17, 18, 19
Granville M. Fillmore	Wednesday, Thursday—June 18, 19
George E. Hay	Monday, Tuesday—June 16, 17
Duncan W. Barton	Wednesday, Thursday—June 18, 19
Frank L. Bonem	Monday through Thursday—June 16, 17, 18, 19

TIME SPENT WITH EXHIBITORS IS WELL SPENT

INDEX TO ADVERTISEMENTS

Abbott Ball Co. 137
Acme Mfg. Co. 131
Allied Finishing Specialties Co. 36
Allied Research Products, Inc. 49
Almco Div., Queen Stove Works 124
Alsop Engr. Corp. 53
Alvey-Ferguson Co. 35
American Chemical Paint Co. 8
Arrow Metal Products Corp. 120
Automotive Rubber Co. 135
Bacon Felt Co. 68
Baker & Co., Inc. 15
Barnstead Still & Sterilizer Co. 134
Baughn Chemical Products Co. 83
Bede Products, Inc. 125
Better Finishes & Coatings, Inc. 149
Bias Buff & Wheel Co. 132
Black Mfg. Co. 122
Blakeslee & Co., G. S. 6
Buffalo Forge Co. 151
Cambridge Wire Cloth Co. 141
Cincinnati Cleaning & Finishing Mchry. Co. 57
Clair Mfg. Co., Inc. 138
Columbia Electric Mfg. Co. 44
Cowles Chemical Co. 24
Davies Supply & Mfg. Co. 37
Despatch Oven Co. 9
Detrex Corp. ..... 14, Fourth Cover
Detro Mfg. & Sales Co., Inc. 130
DeVilbiss Co. 102, 103
DuPont de Nemours & Co., E. I. Electrochemicals Dept. 43
Eastern Felt Co. 156
Egyptian Lacquer Mfg. Co. 4
Enthone, Inc. 55
Exolon Co. 11
Formax Mfg. Co. 79
Fostoria Pressed Steel Corp. 60, 61
Gardner Laboratory, Inc., H. A. 98
Gasway Corp. 133
Hammond Mchry. Builders, Inc. 23
Hanson-Van Winkle-Munning Co. 3, 64, 65
Harrison & Co., Inc. 142
Harshaw Chemical Co. 113
Haveg Corp. 115
Heatbath Corp. 147
Hercules Powder Co. 63
Hisey-Wolf Machine Co. 119
Holland & Sons, Inc., J. 46
Industrial Filter & Pump Mfg. Co. 124
Interchemical Corp., Finishes Div. ..... Third Cover
International Nickel Co., Inc. 45
Jensen Specialties, Inc. 41
Juergens Co., Wm. A. 54
Kalamazoo Tank & Silo Co. 66
Keystone Emery Mills 56
Kirk & Blum Mfg. Co. 84, 85
Kold-Hold Mfg. Co. 17
Lanly Co. 139
Lea Mfg. Co. ..... Second Cover
Lowe Bros. Co. 100, 101
M & E Mfg. Co. 82
MacDermid, Inc. 33
Mahon Co., R. C. 12, 13
Michigan Oven Co. 110
Minnesota Mining & Mfg. Co. 20
Mitchell-Bradford Chemical Co. 10
Morse Mfg. Co., Inc. 50
Munning & Munning, Inc. 73
National Air Sander, Inc. 112
National Rack Company 156
New York Blower Co. 143
Norton Co. 2
Oakite Products, Inc. 1
Ohio Blow Pipe Co. 21
Osborn Mfg. Co. 71
Panoco 157
Park Chemical Co. 136
Parker Rust Proof Co. 69
Peters-Dalton, Inc. 121
Phillips Mfg. Co. 77
Pioneer Rubber Co. 140
Pittsburgh Plate Glass Co., Brush Div. 47
Pittsburgh Plate Glass Co., Paint Div. 86, 87
Randolph Products Co. 67
Ransohoff, Inc., N. 99
Roberts Rouge Co. 16
Rockford Varnish Co. 129
Rossaul Co. 118
Roto-Finish Co. 123
Seamless Rubber Co. 144
Sherwin-Williams Co. 126, 127
Siefen Co., J. J. 51
Simonds Abrasive Co. 153
South Florida Test Service 146
Speedway Mfg. Co. 142
Standard Electrical Tool Co. 59
Stevens, Inc., Frederic B. 7
Strand Div., N. A., of The Balmar Corp. 117
Striplastic Co. 70
Sulphur Products Co. 134
Swift Industrial Chemical Co. 148
Titeflex, Inc. 152
Topper Equipment Co. 62
Udylite Corp. 22
United Chromium, Inc. 38, 39
Varnish Products Co. 136
Wagner Brothers, Inc. 18, 19
Wiegand Co., Edwin L. 80, 81
Wilbur & Williams Co. 98
Williamsville Buff Div., Bullard Clark Co. 111
Young & Bertke Co. 145

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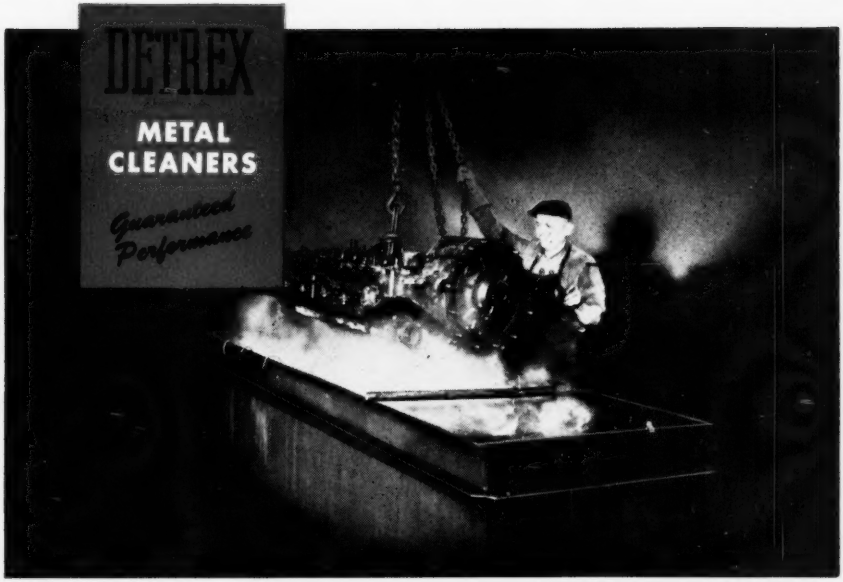

DETREX cuts cost—trims time cleaning motor blocks

Cleaning used motor blocks before rebuilding is the toughest kind of job for a metal cleaner. Soil consists of oil, grease and mud—all baked on from engine heat. After consideration of all the conditions, our field engineer selected Detrex 61 to do the job of cutting costs on the rebuilder's cleaning operation.

Using the same equipment, "61" boosted production to 500 blocks where previous production was only 375 in the same amount of time. As a result the cost of cleaning is substantially reduced.

This is typical performance when Detrex is called in . . . in fact it's guaranteed! Our men have been carefully trained to know cleaning operations and the approach to tackling them. Further, as the only manufacturer of alkalies, emulsions, degreasing solvents *and* the equipment they are used in, Detrex can supply *exactly* the cleaner and equipment the job requires. Our engineers can make recommendations without restrictions. Whether yours is a new cleaning operation or just the need for a better cleaner in your present equipment, it will pay to call Detrex. Contact our local field office in your area or write direct for immediate attention to your needs. **Detrex Corporation, Box 501, Detroit 32, Michigan.**

DETREX CORPORATION

ALKALIES AND EMULSIONS • WASHERS • DEGREASERS
PHOSPHATE COATING PROCESSES • DEGREASING SOLVENTS
DRYCLEANING EQUIPMENT